THE GOVERNOR'S P-20 COUNCIL
October 1, 2007
AGENDA
9:30a.m.

Notice is hereby given to Members of the Governor's P-20 Council and the general public that the P-20 Council will hold a meeting, open to the public, on October 1, 2007, at 9:30 a.m. at 1700 W. Washington, 2nd Floor Conference Room, Phoenix, Arizona. Public comment will be taken. The P-20 Council will discuss and may take action on the following matters. Members will attend either in person or by telephone conference call.

1. **Call to Order & Welcome** — **Dr. Rufus Glasper**

2. **Presentation:** Salt River Pima-Maricopa Indian Community — **Tribal Representative**

3. **Approval of Minutes** — **Dr. Rufus Glasper**
   a. June 22, 2007

4. **Updates:** Policy Making Boards
   a. Arizona Board of Regents — **Joel Sideman/Regent Calderon**
   b. State Board of Education — **Vince Yanez**
   c. Early Childhood Development and Health Board — **Karen Woodhouse**

5. **Presentation and Discussion:** Alignment of Mathematics Standards — **Dr. Karen Nicodemus, Dr. William McCallum, Jeff Thies, Cheryl Lebo**

6. **Presentation and Discussion:** Higher Education Demand and Feasibility Study — **Dennis Jones, President NCHEMS**

7. **Committee Updates and Reports** — **Committee Chairs**
   a. Communications Committee – **Paul Luna**
      - Communications Plan
   b. Education Alignment Committee – **Dr. Karen Nicodemus**
      - Mathematics Alignment Project; Higher Education and Feasibility Study; and Algebra II End of Course Assessment
   c. Education Workforce/Pathways Committee – **Dr. Jim Zaharis & Susan Carlson**
      - Enhancing academic content within CTE courses and the potential of universities accepting CTE credit for entry
   d. Teachers Committee – **Dr. Kino Flores**
      - TQS Report
   e. Adolescent Literacy Committee – **Kristen Rex**
      - Literacy Toolkit
   f. Data, Assessment & Graduation Committee – **Dr. Sybil Francis**
      - Teacher ID Legislation
   g. Steering Committee – **Dr. Rufus Glasper**
      - Strategic Planning

8. **Update:** 21st Century Skills Summit — **Dr. Ron Marx**

9. **Call to the Public** — **Dr. Rufus Glasper**

10. **Announcements and Adjournment** — **Dr. Rufus Glasper**

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GOVERNOR'S P-20 COUNCIL
October 1, 2007

Agenda Item No.	1.
Subject:	Call to Order Welcome
Submitted by:	Debra Raeder Executive Director

----- Background Information -----

Dr. Rufus Glasper will call the meeting to order, welcome any guests, and provide a brief overview of the meeting.

Council Action Requested:	None.
Attachments:	None.

GOVERNOR'S P-20 COUNCIL
October 1, 2007

Agenda Item No. 2.

Subject: Presentation: Salt River Pima-Maricopa Indian Community

Submitted by: Debra Raeder
Executive Director

----- Background Information -----

In August, 2007, staff submitted a grant proposal to the Salt River Pima Maricopa Indian Community (SRP-MIC) to fully develop an Arizona STEM Center to increase our capacity as a state to support and improve STEM education in Arizona. The four major goals of this STEM Center will be to: expand public awareness and understanding of the importance of mathematics and science in Arizona; increase the number of students who take courses and master high-level mathematics and science subjects, and pursue STEM careers; improve the quality of mathematics and science education by recruiting, preparing and retaining a larger number of high-quality teachers; and strengthen the interaction between postsecondary programs and the business sector to improve students' STEM-career opportunities.

The SRP-MIC has awarded the Governor's Office $100,000 for this proposal. Representatives from the SRP-MIC will be present to make a symbolic presentation to the Governor and the P-20 Council.

Efforts are ongoing to secure additional funding for the Arizona STEM Center.

Council Action Requested: None

Attachments: None

GOVERNOR'S P-20 COUNCIL
October 1, 2007

Agenda Item No. 3.

Subject: Approval of Minutes

Submitted by: Debra Raeder
Executive Director

----- Background Information -----

The minutes from the Governor's P-20 Council's regular meetings held on June 22, 2007 are submitted for review and approval.

Council Action Requested: Approval of P-20 Council Minutes of June 22, 2007

Attachments: Minutes of June 22, 2007

GOVERNOR'S P-20 COUNCIL
MINUTES
General Meeting- June 22, 2007
2:00 p.m.

Location: Northern Arizona University
Student Union, North Campus, Havasupai Room, 2nd Floor
Flagstaff, Arizona

Members Present: Dr. Rufus Glasper, Amy Besing, Mark Bryce, Ernie Calderon, Susan Carlson, Dr. Michael Crow, Dr. David Curd, Gregory Donovan, Dr. Roy Flores, Dr. Sybil Francis, Lynda French, Harry Garewal, Dr. John Haeger, Bob Hagen, Superintendent Tom Horne, Cathy McKee, Paul Luna, Dr. Karen Nicodemus, Dr. Douglas Olesen, Dean Phillips, Kristen Rex, Xan Simonson and Dr. Jim Zaharis.

Members Absent: Susan Budinger, Dr. Angel Cabrera, George Dean, Mike DeLao, Dr. Kino Flores, Jack Jewett, Dr. Laura Palmer Noone, Bill Putnam, Dr. Robert Shelton, Councilman Greg Stanton, Mayor Robert Walkup and Governor Napolitano

1. **Call to Order & Welcome**
   Dr. Glasper called the meeting to order at 2:00 p..m., welcomed those in attendance and introduced the newest members to the P-20 Council:
   - **Susan Budinger**, a Founding Director of the Rodel Charitable Foundation of Arizona, and member of the Arizona Community Foundation Board of Directors; and
   - **David Martin**, President of the Arizona Chapter of the Associated General Contractors.

   Dr. Glasper ask the Council to reflect on the Governor's call to action delivered at the luncheon earlier as they proceeded through the agenda:
   - Time is of the essence – need to focus on implementation and results;
   - Need policy making boards to provide regular updates to the Council on strategic plans and progress on implementing changes – to start at next meeting of the P-20 Council;
   - We are all accountable for improving the system and getting results.

2. **Approval of Minutes: March 22, 2007**
   Harry Garewal indicated that the minutes of March 22, 2007, did not reflect his attendance at the meeting. Susan Carlson moved approval of the June 22, 2007 Governor's P-20 Council meeting minutes as presented with a correction to reflect Mr. Garewal's attendance. Motion was seconded by Cathy McGee and unanimously approved.

3. **Presentation and Discussion: Higher Education Demand and Feasibility Study**
   Dennis Jones, President of the National Center for Higher Education Management Systems (NCHEMS) provided the Council with an update on the Higher Education Demand and Feasibility Study. Mr. Jones provided information on a series of regional meetings that are

being planned to create a dialogue with community leaders throughout the state and to share some of the data. Mr. Jones indicated that the final report will be presented to the Council at the meeting on October 1, 2007. The Council engaged Mr. Jones in questions regarding the methods for garnering and incorporating input and data into the study.

4. **Committee Updates and Reports**
   a. **Communications Committee:** Paul Luna reported that work continues with philanthropic partners and the Arizona Board of Regents, the Early Childhood Development and Health Board, and others to develop strategies for a short- and long-term communications plan to build public awareness and support of the P-20 Council's recommendations as they are being implemented and to inform key Arizona constituencies.
   b. **Education Alignment Committee:** Dr. Karen Nicodemus reported that the Mathematics Alignment Team has completed the initial review of Arizona's mathematics standards and provided the first set of recommendations to Achieve Inc., for quality review in the process to align our standards with Achieve's benchmarks as well as expectations of community colleges, universities and the workforce. Team members participated with the Arizona Department of Education's Mathematics Task Force to obtain their input and recommendations into this process. The Alignment Team will participate in Achieve's second Alignment Institute in Minneapolis on July 28th-31st and is on track to bring recommendations to the Governor and Council at the October 1st meeting.
   c. **Education Pathways/Workforce Committee:** Dr. Jim Zaharis and Susan Carlson reported that the Committee continues to address expanding and creating multiple pathways that will enhance opportunities for students to successfully complete rigorous and aligned coursework including early college options; methods to embed academic content into CTE coursework; appropriate assessments for CTE courses; and has formally ask ABOR to revisit CTE credit issues. After discussion on the issue of college acceptance of CTE credits, the Committee was asked to devise a viable solution for ABOR to consider.
   d. **Teachers Committee:** Staff provided a brief update indicating that the Committee continues to monitor the status of the Teacher Working Conditions Survey and that a final report is anticipated in mid-summer. The Committee has also been reviewing the Teacher Quality and Support Committee's draft report, and a final version will be presented to the Council at the October 1st meeting.
   e. **Adolescent Literacy Committee:** Kristen Rex reported that the Committee is working to compile and review the data obtained during the Adolescent Literacy forums. Using this information, the Committee will formulate a toolkit of strategies for school districts in addressing adolescent literacy.
   f. **Data, Assessment and Graduation Committee:** Dr. Sybil Francis reported that the Committee continues to work on strategies to implement the 10 elements of a longitudinal data system and is currently working on teacher identifier legislation. It was noted that ASU has received a grant to launch a pilot teacher-tracking program.
   g. **Steering Committee:** Dr. Glasper provided a brief overview of the meeting between the Steering Committee and ABOR earlier in the day. Dr. Glasper indicated that the

Committee Chairs provided updates on the work of the committees and engaged in dialogue on ABOR's role in supporting the following goals:

- Raising graduation requirements and implementation of a core curriculum;
- Enhancing the academic content embedded within Career and Technical Education Programs (CTE) and to work toward university acceptance of CTE course credits for admission;
- Implementation of an effective data system specifically the development of a teacher identifier, student level transcript information, student college readiness test scores, and the ability to match student records between the P-12 and higher education systems; and
- Increasing access to higher education by increasing and simplifying transfer and articulation agreements and increasing college and early college opportunities.

5. **Presentation and Discussion: American Diploma Project – Algebra II End of Course Exam**

Dr. Karen Nicodemus and Dr. Jim Zaharis updated the Council on their participation, along with Cheryl Lebo from the Arizona Department of Education and Governor's staff, in the ADP Network Leadership Team Meeting on June 4th-5th in Washington D.C. Arizona joined teams from 22 other states to discuss such issues as high school assessments and accountability; preparing students for college and work; raising graduation standards and graduation rates at the same time; and higher education's role in helping students be college and work ready. Participating states were invited to join with a nine state consortium that has been working to develop a common end-of-course exam in Algebra II. Dr. Nicodemus and Dr. Zaharis provided information and a fact sheet on the work of the consortium on this assessment and asked for direction from the Council. After discussion, Dr. David Curd moved that Arizona join with the nine state consortium to finalize and implement the common Algebra II end-of-course assessment. Motion was seconded by Susan Carlson unanimously approved.

6. **Discussion: Strategic Planning**

Dr. Glasper indicated that staff has provided a one page overview identifying the major recommendations of the Council and is working to fully develop a strategic plan and timeline to accomplish these goals. Dr. Glasper reiterated the need to reflect on the Governor's charge, goals and recommendations and to accelerate implementation of the recommendations.

7. **Call to the Public**

The Council heard public input from: Ted Kraver requested the Council be mindful of various models for education reform. Barbara Border indicated that the Career and Technical Education Department has a committee working on certification. Barbara Kraver addressed the need for more communications and a step-by-step approach in education modernization.

8. **Announcements and Adjournment**

Lauren Kielsmeier announced that Arizona was not awarded a NGA STEM Grant.

The next meeting of the Governor's P-20 Council is scheduled for October 1, 2007, at 10:00 a.m. This meeting will be at 1700 W. Washington, Governor's Second Floor Conference Room, Phoenix.

There being no further business, Dr. Glasper adjourned the meeting at 3:43 p.m.

GOVERNOR'S P-20 COUNCIL
October 1, 2007

Agenda Item No.	4.
Subject:	Updates: Policy Making Boards
Submitted by:	Debra Raeder Executive Director

----- Background Information -----

a. Arizona Board of Regents – Joel Sideman/Regent Calderon
b. State Board of Education – Vince Yanez
c. Early childhood Development and Health Board – Karen Woodhouse

At the June 22nd meeting of the Council, Governor Napolitano charged the policy making boards to provide regular updates to the Council on strategic plans and progress of each entities' major goals and initiatives and on implementing the Council's recommendations.

Council Action Requested:	None
Attachments:	ABOR Quarterly Report State Board of Education letter and information on proposal to increase high school graduation requirements.

QUARTERLY REPORT

to the

Governor's P-20 Council

October 1, 2007

ARIZONA BOARD OF Regents

Quarterly Report to the Governor's P-20 Council

October 1, 2007

CONTENTS

Quarterly Report to Governor's P-20 Council
October 1, 2007

Progress on the Five Priorities

The Arizona Board of Regents and universities are pleased to provide this first quarterly report, which is organized into the P-20 Council's five priorities.

1. **Raise Graduation Standards and Implement a Core Curriculum.**

   - Board policy requires three years of science and four years of high school math, including at least one course for which Algebra II is a prerequisite, for admission to a state university.

   - University presidents and the Board of Regents endorse the review of the state's math standards and support changes to the high school graduation requirements which bring them closer to those required for university admission

   - To help promote a more rigorous high school curriculum, the Regents have made a three-year commitment of $75,000 annually for the Arizona Academic Scholars program, an initiative of the Arizona Business and Education Coalition.

   - University faculty members from all the universities are participating in the Achieve Alignment Institute which addresses the alignment of the math curricula between high school and higher education.

2. **Enhance the Academic Content Embedded within Career and Technical Education Programs.**

   - The Board supports the efforts of the P-20 Council on this priority and welcomes the opportunity to work with the Council on content alignment with university admission requirements.

   - Current Board policy provides alternatives for students who have not completed the traditional curriculum to meet admissions requirements. This includes set scores on the ACT/SAT tests by subject area.

3. **Implement an Effective Data System Using Ten Essential Elements of a Longitudinal Data System.**

   - Dan Anderson, assistant executive director for institutional research, ABOR, was assigned to work with the P-20 Council and serves as liaison to the universities' Institutional Research staff as they pursue this priority.

- Christine Thompson, assistant executive director for legislative affairs, ABOR, is participating on the work group on data legislation, organized by the Governor.

- Universities are available to work with the Council to identify effective ways to track students through the Arizona State System for Information on Student Transfer (ASSIST). ASSIST provides information on community college and university enrollment and transfer patterns. It is jointly funded by the public community colleges, universities, and the state legislature.

4. **Increase Production of Teachers in STEM Fields and Ensure Effective Preparation and Certification.**

- This goal is shared by universities and the Board. In fact, state funding was provided to the Board of Regents in the FY 2008 budget for a loan forgiveness program for students seeking to become math, science, and special education teachers.

    - Implementation guidelines are being developed for the loan forgiveness program, which begins in spring 2008.

- Information on the capacity of the universities to prepare math and science teachers and their efforts to increase these numbers was reported to the P-20 Alignment Committee at the September 20 meeting. Please see **Attachment A** for that report.

- **ARIZONA BOARD OF REGENTS' GRANTS**

  ABOR funds two grant programs and manages another, all of which have initiatives which address the need to improve the math and science preparation of students and teachers.

  <u>Arizona Regents Reach Out (ARRO) Distance Learning Grant Program.</u>

  ARRO grants are for faculty-initiated, innovative distance-learning high impact projects that are collaborative among the three universities, that support workforce development and that are transferable, portable, shareable, and scalable.

    - For 2008, the Board will give priority to projects which have an emphasis "in support of the Governor's P-20 Council interest in increasing production of K-12 teachers in science, technology, engineering, and mathematics (STEM) fields, and ensuring effective preparation and certification of these teachers."

    - Funded through Prop 301 funds, approximately $500,000 will be awarded for these grants. Proposals are due on October 15, 2007.

Title II Improving Teacher Quality Grants.

The Arizona Board of Regents serves as the administrative agency for Arizona's "Improving Teacher Quality" grants, a major component of the Federal No Child Left Behind legislation, to encourage scientifically-based professional development as a means for improving student academic performance.

- In August, the Arizona Department of Education and the Board chose to direct $561,000 in ITQ funding to support three to four "special-focus" projects that address either of two high-priority, high-need target groups – one of which is "middle-school or high-school teachers of math or science, teaching in high-need districts, who need math and science content instruction" in order to meet the State and Federal standards of "highly qualified."

- Proposals are due September 18, with 19-month project funding to begin January 2008.

Learner Centered Education Course Redesign Initiative

The Board recently approved over $600,000 for a course redesign initiative which awards grants to faculty at the three universities to increase the learning outcomes in large enrollment undergraduate courses.

- The National Center for Academic Transformation (NCAT), nationally recognized for a course redesign structure which increases student learning and improves the use of resources, is working with the Board of Regents and the universities on this two-year long initiative.

- Of the 13 courses approved for redesign, eight are science, math and technology courses:

  - ASU: General Chemistry, College Algebra, Introduction to Physical Geology and Computer Literacy
  - NAU: Introductory Biology
  - UA: Introductory Biology, Fundamentals of Chemistry, and Geological Perspectives

Other Initiatives

- Fred Hurst, Executive Director of the NAU Statewide Programs, is leading a collaboration of Northern Arizona University and universities in other states to offer online teacher preparation in the STEM fields.

- Each of the universities has included requests for state funding in their 2009 budget requests to expand their capacity to address teacher shortages in Arizona.

- NAU is requesting support to create AZ-STEM Teach, a program to develop and deliver high quality secondary mathematics and science course students in Arizona high schools through web and mediated TV lectures.

- NAU is also requesting funds to support a significant STEM recruitment effort that would include a student recruitment crops, community college articulation support and instructional initiatives to address problems with the high numbers of students receiving D or F grades in or withdrawals from key STEM courses.

- ASU is requesting funds for a PK-20 STEM Education Initiative, which by 2011, will increase annual teacher production in secondary math and secondary science by 200 teachers.

- UA is requesting funds to support a program to partner with communities to increase the numbers of STEM teachers. This initiative will include increased recruitment, developing on-line courses, increasing statewide access to professional preparation in rural and underserved areas.

- The Universities are very committed to ensuring effective preparation of the students in their education programs. Each university provides a brief overview of the ways in which this is accomplished in **Attachment B**.

5. Increase Access to Higher Education

Efforts to increase access to higher education in Arizona are best achieved through joint community college-university efforts, and the ABOR universities continue their very extensive and successful collaboration with the Arizona's community colleges.

Joint Conference Committee of the Universities and Community Colleges (JCC).

In 2005, the JCC developed a set of six recommendations for improving affordable access to the baccalaureate degree which have been endorsed by the Arizona Board of Regents and recognize the importance of the community college collaborations. The recommendations provide an outline through which new or expanded initiatives can be identified. Annually the universities and community college report on their progress in implementing these recommendations.

External Evaluation of Arizona's Transfer Articulation System.

In May, 2007, a report was issued on a study of Arizona's transfer articulation system, commissioned by the statewide community college-university Academic Programs Articulation Steering Committee (APASC). Prepared by Hezel Associates, Syracuse, New York, Arizona's system was given generally high marks. Two key findings:

- Transfer students who complete the statewide general education curriculum persist and achieve better at the universities than other transfer students, and they graduate with fewer credits.

- Over a 5 year period (2001-2006), the average credits completed by transfer students for a degree at the public universities dropped by 12 credits, or one semester. This is a significant savings for students and benefits Arizona with these students available more quickly for the work force.

- However, one area identified for significant needed improvement was online services for transfer students. Students, faculty, academic advisors and staff need easier access to information on transfer to support accurate decision-making.

- As a result of the above recommendations, the Board approved a one-time allocation of $125,000 for two major projects:

  - An upgrade to the navigation, layout and design of the Arizona Transfer Articulation Support System (ATASS) website.

  - Implementation of an automated system which will allow students to easily upload their completed community college courses to determine how credits will apply to major requirements at the universities. The new system will provide students and advisors with a tailored, easy-to-access academic plan for successful transfer.

Increasing Access to Degree Opportunities at the State Universities in Arizona

At the March 2007 ABOR meeting, at the request of then-President Robert Bulla, the universities provided a summary report of their specific programs and initiatives with the state's public community colleges to increase access to baccalaureate degrees. This report will be found in **Attachment C** in this report.

Attachment A

Report to the P-20 Alignment Committee
Sept 20, 2007

PROGRAMS AT THE PUBLIC UNIVERSITIES TO INCREASE MATH and SCIENCE TEACHERS

This summary report addresses the public universities' capacity to prepare math and science teachers, and describes their strategies and programs to increase the numbers of these graduates for the future.

Part I
MATH AND SCIENCE TEACHER GRADUATES

This section summarizes the numbers of graduates from certification programs in math and science by institution and for the system as a whole for the immediate past three years and projected for the next three years. Collectively, the universities anticipate approximately a three-fold growth from AY 2005 to AY 2010 in both of these teaching fields.

Graduates from the Universities in Math and Science 2005-2007; Anticipated Graduates, 2008-2010

MATHEMATICS

	ASU	NAU	UA	**Total**
AY 2005	36	9	20	**65**
AY 2006	45	13	21	**79**
AY 2007	48	8	20	**76**
AY 2008*	54	10	33	**97**
AY 2009*	80	16	42	**138**
AY 2010*	100	22	55	**177**

SCIENCE

	ASU	NAU	UA	**Total**
AY 2005	32	19	32	**83**
AY 2006	42	38	36	**116**
AY 2007	45	22	38	**105**
AY 2008*	52	36	51	**139**
AY 2009*	80	45	75	**200**
AY 2010*	105	64	99	**268**

**Projections*

Part II
UNIVERSITY INITIATIVES TO INCREASE MATH AND SCIENCE TEACHER PRODUCTION

Each of the universities has developed a range of initiatives to achieve the projected numbers of math and science teachers, as shown in Part 1, and which are expected to show greater increases over time. The individual university programs and plans will be found in the following pages listed below:

Arizona Board of Regents Loan Forgiveness Program

In addition to the universities' initiatives, the Arizona Board of Regents was given funds by the Arizona legislature in 2007 to set up and manage a loan program for Arizona resident students at the universities pursuing math, science and special education certification. This program has a "forgiveness" provision so that a student may pay off the loan by working as a teacher in math, science or special education in Arizona public schools.

- Initial distribution: Spring 2008
- 1,750,000 for prospective math and science teachers and $500,000 for prospective special education teachers.
- Funds may be used to defray up to the cost of in-state tuition, instructional materials and mandatory fees.
- Loans are to be granted on terms and conditions established by the Board and distributed to qualified applicants on a first come, first served basis.
- Students may have the loan forgiven by working one year for every year the loan was received, plus a year. (Three years of loan money requires four years of full time teaching to pay it back).
- Students who do not pursue teaching will repay the loan with interest at 1% over the federal subsidized loan rate or 7%, whichever is greater.
- A policy will be presented to the Board at the September 27-28 meeting, to formalize the loan.
- A tri-university committee is working with the Board central staff to develop the criteria and application process for the loan program.
- Publicity to prospective students will be distributed in early October and awards should be announced in late November.

ARIZONA STATE UNIVERSITY

Dean and Senior Vice Provost for Education and Innovation George Hynd

- Production of new B.A.E./B.S. degrees, which provide rigorous instruction in content areas in addition to pedagogical preparation. Content areas for the B.S. are mathematics, physics, chemistry, earth and space science, and biology.
- Partnership with 200 Teach for America corps members as students in an initial master's degree and teacher certification program. Forty of these students are pursuing certification in STEM areas.
- New online secondary science and math teaching degrees leading to certification for both undergraduate and graduate students by fall 2008.These programs are expected to enroll 20-30 new teaching students annually.
- Newly created Math Institute to enhance math teaching and learning university-wide.
- Courses to qualify in-service teachers for certification in middle school math and science. These courses are designed in partnership by scientists, mathematicians and educators to certify teachers as highly qualified and will produce at least 100 new STEM teachers per year by 2010.
- Increased recruiting and retention for teacher preparation program by positioning teacher preparation as a pre-professional program similar to business or engineering and clarifying the path to the classroom for future teachers.
- Joint advising between the natural sciences and mathematics colleges and education colleges for dual degree students ensure they are receiving consistent advising in both academic homes and are making timely progress toward their degrees.
- Increased innovation in the teacher preparation curriculum through expanded course offerings that integrate content and pedagogy, including the development of new courses in addition to the teaching/learning-focused calculus course.
- New STEM teaching degrees for 08-09 that include research and discovery-based science and math classes and examining how to orient curricula and degree requirements around the knowledge and skills teachers need in classroom.
- Pathways to math and science teaching for successful engineering students who no longer want to pursue engineering degrees.
- A pilot program to recruit 35 undergraduate math students to teaching through peer-to-peer math tutoring. The program, run by the Center for Research on Education in Science, Math, Engineering and Technology (CRESMET), provides stipends and as faculty mentoring giving student tutors exposure to opportunities in STEM teaching.
- Additional Degree Programs for 2007-08
    - B.A. - Secondary Math
    - B.A.E - Middle School Natural Science, Secondary Education for Biology

University-wide Teacher Preparation

To facilitate university-wide collaboration, the deans of each of ASU's three education colleges are coordinating positions specific areas essential to improving the strength of our education programs. Mari Koerner, dean of the College of Teacher Education and Leadership, is also the director of university teacher Preparation, responsible for coordinating all teacher preparation programs throughout ASU, with a particular focus on

STEM teacher preparation. George Hynd, who is dean of the Mary Lou Fulton College of Education effective December 31, 2007, will also be senior vice provost for education and innovation, responsible for coordinating the team of education deans. And, Carole Greenes, dean of the School of Educational Innovation and Teacher Preparation, is Director of University Math Initiatives and is leading a math institute that will pull together all existing mathematics education resources at ASU and apply for grants to enhance teacher preparation in mathematics at all grade levels.

PK-20 STEM Education Initiative

Given the critical need for strong math and science education to assure the state's economic future, ASU is committed to increasing the number of highly effective math and science teachers. We have proposed to the governor nearly doubling the number of math and science teachers prepared annually by ASU on all three campuses to about 150 by 2009 through the PK-20 STEM Education Initiative. By 2011, the initiative will increase annual teacher production in secondary math and secondary science by 200 teachers. We have included $4 million in our budget request this year to cover costs of this program.

The PK-20 STEM Education Initiative content areas are biology, chemistry, Earth and atmospheric sciences, engineering, mathematics, and physics.

Goals:

- To aggressively recruit students to become middle school and secondary teachers in the STEM areas with special emphasis on attracting more students from typically underrepresented populations.
- To offer innovative courses through validated high impact, and effective instruction. This would include creating and offering coursework which combines content with best practice pedagogy. And also coursework in content which builds upon and integrates content in all of the areas.
- Expand the pipeline of students and effective teachers beginning in the earliest grades (Pre-K) and continuing through university work. By shifting the focus to the earliest years of education it is anticipated that greater vertical alignment in standards-based course content will occur such that issues of articulation in post secondary STEM education will be facilitated.
- Provide integrated content/pedagogy courses.
- Offer innovative workshops in the STEM content areas for existing teachers.

ASU Degree or Certificate Holders Eligible for Teacher Certification in STEM Areas

In 2006, ASU produced 87 graduates eligible to apply for math or science certification in the State of Arizona. By 2012, we expect all STEM teacher certification programs combined to produce 500 degree or certificate holders eligible to apply for secondary certification in STEM areas.

NORTHERN ARIZONA UNIVERSITY

Dean Daniel Kain

MAST (Master of Arts, Science Teaching): Program created to provide necessary and relevant content to currently certified teachers (primarily at the middle level) in order to become highly qualified in science.

Master's degree with certification option: In recognition that many students complete degrees in their content area (particularly math and science) before deciding on a teaching career, NAU created a master's degree with certification option so that these students would be able to pursue the graduate degree (and generally higher starting salary) along with their initial certification to teach.

Alternative preparation options: AZUN, the Alternative Secondary Path to Certification, Proposition 301 alternative programs. These programs are designed to draw on the traditional requirements and standards for teacher certification, but they are packaged to fit the lifestyles of working adults who are changing careers. In some cases, the candidates have been hired under emergency or internship certification; in others, candidates maintain their non-teaching jobs while undertaking the program of studies in anticipation of teaching mathematics or science. These programs have particular emphasis on serving rural or remote students.

NAUTeach: NAU has submitted a proposal for a replication site of the highly successful UTeach program developed at the University of Texas (Austin). Their program grew from 28 students in 1997 to an enrollment of over 450, with some 70 graduates per year certified to teach math and science. NAUTeach will create a prestigious program to invite outstanding mathematics and science majors to consider the teaching profession. We learn of the status of our application by mid October.

STEM expansion package: NAU has proposed a budget package to increase the university's capacity to produce STEM graduates by 50% by the year 2012 (from 400 to 600 graduates). While not targeted directly at producing teachers, this proposal will increase the pool of candidates to teach.

NAU math/science pipeline activities: The university supports numerous programs targeting middle school and high school students and their skills and interests in mathematics and science. A brief sampling of such programs is as follows:

- High school math day at NAU.
- NAU majors fair.
- Middle school engineering and sciences day at NAU.
- Northern Arizona regional science and engineering fair.
- Varied regional awareness fairs (Tuba City, Mesa, Avondale)
- Girls in Science Summer Day Camp
- Summer Scholars (applied science)
- Summer Enrichment Program
- Engineering Outreach Program
- STEP UP (engineering)

THE UNIVERSITY OF ARIZONA

Dean Ron Marx

Science and Mathematics Teacher Preparation at the University of Arizona

Over the last several years the University of Arizona has expanded its effort to prepare science and mathematics teachers for Arizona schools. We realize that we do not prepare enough teachers to meet current and future demands and that we need to do more. For example, the university was the recipient last year of a National Science Foundation Noyce Scholarship Grant that provides substantial scholarship money for science and mathematics majors who become middle or high school teachers through our teacher preparation program.

The College of Education and The College of Science collaborate in running the National Science Foundation Center for the Mathematics Education of Latino(a)s. This center provides considerable research and development efforts in mathematics education and conducts teacher professional development activities for area schools.

College of Education

Early Childhood – birth through year 8

This is a new undergraduate program that prepares preschool, kindergarten, and grades 1-3 teachers, leading to the new Arizona Early Childhood teaching certificate. As part of the program, the pre-service teachers learn to teach both mathematics and science to very young children. The program is housed in the department of Teaching and Teacher Education.

Elementary Education – grades K-8

This is a new undergraduate program that prepares grades K-8 teachers, leading to the Arizona Elementary teaching certificate. As part of the program, the pre-service teachers learn to teach both mathematics and science to children. The program is housed in the department of Teaching and Teacher Education.

Secondary Post-baccalaureate – grades 7-12

This program is designed for those who already have a bachelor's degree in mathematics or in a science discipline. The program leads to the Arizona Secondary teaching certificate in mathematics or one of the science content areas. The program is housed in the department of Teaching and Teacher Education.

Teach for Tucson – grades 7-12

This is a "fast-track" program that leads to both a Master of Arts in Teaching and Teacher Education and the Arizona Secondary teaching certificate in mathematics or in a science discipline. The program is housed in the department of Teaching and Teacher Education. Recruitment includes advertising in local newspapers, hosting information sessions, and

flyers sent to contacts. This program is supported by TRIF funds; students receive substantial scholarships as a way to offset the forgone earns loss associated with changing careers.

Master of Arts for current teachers

The MA program in Teaching and Teacher Education offers concentrations in elementary mathematics education or science education. The program, which does not lead to teacher certification, is housed in the department of Teaching and Teacher Education.

Doctor of Philosophy for current teachers

The PhD program in Teaching and Teacher Education offers concentrations in mathematics education or science education. The program, which does not lead to teacher certification, is housed in the department of Teaching and Teacher Education.

College of Science

Science Education – grades 7-12

The College of Science Teacher Preparation Program in Science is an undergraduate program that leads to the Arizona Secondary teaching certificate in one of the science content areas. The program is not housed in any one department but is an interdisciplinary program. Students in the program can major in a science discipline and get teaching certification or can major in science education. Recruitment for this program includes faculty who visit science courses, information for department advisors, information sessions hosted and run by faculty, and advertising the availability of Noyce (and other) scholarships. Recruiting information is also provided to Pima Community College. Students in this program also receive TRIF scholarship support.

Mathematics Education – grades 7-12

The College of Science Teacher Preparation Program in Mathematics is an undergraduate program that leads to a bachelor's degree in Mathematics and to the Arizona Secondary teaching certificate in mathematics. The program is housed in the Mathematics department. Recruitment includes faculty speaking in mathematics classes, informing advisors and other faculty, hosting information meetings, and advertising the availability of Noyce (and other) scholarships. TRIF also partially supports the Center for Recruitment and retention of Teachers in the Mathematics Department. This organization recruits undergraduates to mathematics teacher education by employing them as tutors in area schools. The Center also provides professional development and beginning teacher induction programs for area teachers.

Attachment B

ENSURING EFFECTIVE PREPARATION FOR TEACHERS

In response to Goal # 4, the following information provides a brief overview of how the universities ensure their teacher-graduates are well prepared for the classroom.

Arizona State University

Teacher preparation programs are aligned with national and state standards
At ASU, all of our teacher preparation programs are approved by the Arizona Department of Education. All teacher certification classes and programs are aligned with state requirements for teacher certification and state content standards. The pass rates in the AEPA are very high in all certification areas. Teacher certification programs are designed to ensure prospective teachers are able to effectively address the Arizona state standards within the curriculum.

Providing support to students while in the teacher preparation programs
All teaching methods classes focus on curriculum that is appropriate for the grade level the students will teach. Each teacher preparation student understands how to assess student learning and teach content in order for their students to meet state standards. The teacher preparation students are closely observed by faculty and their progress monitored to ensure they are acquiring the knowledge and skills needed for teaching in the 21st century classroom. Tutoring, faculty mentoring, and academic advising are all readily available to all students. Retention in all of the teacher preparation programs is high.

Extensive and meaningful pre-service preparation
ASU requirements exceed state requirements for clinical observation and practice. Each student is placed with mentor teachers who are appropriately certified and in classrooms where they can observe and work with teacher who are successful in teaching students to meet standards. In providing student teaching experiences, the culmination of teacher preparation programs, each of the ASU colleges of education works closely with local communities and school districts to ensure that the student teaching experience is relevant and meaningful, and are supportive environments which further ensure teacher success. Examples of these efforts include:

- *The Urban Teacher Corps* offers instructional assistants and other district support service personnel a flexible education and certification program designed to meet the needs of working adults in designated public educational systems.
- Through the *Professional Development School (PDS) Teacher Education Program*, a cohort of teaching students is prepared in an intensive immersion program for 12, 18 or 24 months; including extensive clinical practice in seven high-poverty schools throughout Arizona.

Transition and support for new teachers
Each education college has a Director of clinical placements who has oversight of ensuring student teaching placements meet state standards; i.e., cooperating teachers are appropriately certified and students are placed in the grades in which they will be certified. Many of the programs have an applied research course where students look at their own practices and try interventions which can improve the way they teach. In addition, ASU has a wide range of partnerships with K-12 schools that support beginning teachers, including:

- *The Beginning Educator Support Team (BEST)* helps beginning teachers establish and strengthen best practices in 15 Phoenix-area schools. The program helps retain new teachers by providing on-site teacher support and mentoring teachers over a period of three years.
- *The Alpha Partnership* with schools in high-need districts encourages increased placement of pre-service student interns through recruitment activities and scholarship incentives ($300,000 in FY07), monitors teacher placements and retention, and provides professional development opportunities and scholarships for in-service teachers to obtain professional development.

Northern Arizona University

Teacher preparation programs at Northern Arizona University take numerous actions to ensure the quality of our graduates. Our participation in accreditation with the National Council for the Accreditation of Teacher Education (NCATE) requires that we document quality assurances. Key points for ensuring quality are listed below.

Programs aligned to national and state standards
All teacher education programs at Northern Arizona University are aligned to the state standards for beginning teachers and to the relevant national associations' standards (e.g., the National Council for Teachers of Mathematics or the National Science Teachers Association).

Transition points monitor preparation
All candidates to become teachers pass through four transition points: #1, acceptance into the program (based on sufficient course work, high enough GPA—including content coursework—and recommendations from those who have seen them work with young people); #2, admission into student teaching (based on minimum GPA and completion of designated assignments); #3, completion of student teaching (based on acceptable performance on standards-based assessment of student teaching); and #4, completion of the program (based on degree audit of program requirements). Enforcing these transition points provides feedback to the program, as well as quality control for candidates.

Extensive and diverse field work
All candidates participate in numerous field work experiences, with diverse students and in diverse settings. Field work is guided by standards set out by the program, and monitored by trained professionals. All candidates participate in an extensive student

teaching experience (ca. 16 weeks) as a culmination of their programs. Candidates must demonstrate they have the ability to positively impact student learning.

Ongoing assessment of candidate proficiencies
All candidates participate in a web-based electronic portfolio system (TaskStream), which accomplishes several purposes. First, candidates learn to negotiate elements of contemporary technology. Second, candidates participate in standardized program assessments, ensuring that all candidates can function effectively. Third, data from the programs are available for program review by faculty members, allowing both quality control for a widely-dispersed effort and also program enhancement. The assessments focus on strategic performances that characterize effective teaching.

The University of Arizona

- **Admissions Process**: Students entering the College of Education Teacher Preparation Program, in addition to a minimum GPA of at least 2.5, must have at 60 documented hours of experience with school-age children in an educational setting plus a minimum of 50 hours documented cross-cultural experience.

- **Field Experiences:** Students in the elementary program and the secondary Teach for Tucson program have a strong field experience component. Essentially half of students' preparation program is situated in schools. The semester prior to student teaching is taught at a school site with heavy emphasis on connecting theory with practice.

- **School District partnerships:** School districts provide support for field based programs by providing, at no cost, classrooms within their schools where university faculty teach our students. Six school districts participate in this partnership with the University of Arizona. Additional districts offer placements for our student teachers throughout southern Arizona.

- **Clinical Faculty:** Through a unique intergovernmental agreement with school districts, UA is able to hire master teachers for the school districts who are "on loan" to us teach students as expert practitioners. Clinical faculty are usually assigned these positions for two to three years and then return to their home districts.

- **Professional Standards:** Our programs are strongly correlated with the Arizona Professional Standards and are embedded in the student expectations and outcomes of each course. During student teaching, assessments are designed to ascertain whether students have met each of the standards through demonstrated practice.

- **Professional Preparation Board (PPB):** The PPB consists of a membership of 40 professionals across the university as well as external stakeholders (school districts, charter schools, private schools, ADE). Meeting monthly, one of Board's charges is to provide input in the direction of the teacher preparation program.

Attachment C

Increasing Access to Degree Opportunities at the State Universities in Arizona

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February 1, 2007

Preamble

The three state universities (each with multiple campuses) under the Arizona Board of Regents (ABOR) are fully aware of the rapidly growing college-age population – and the need to serve even more Arizonans closer to middle age and beyond – at a time when our state leads the nation in population growth. We are aware, for example, that between 2004 and 2009 the number of individuals aged 15-24 is likely to grow by over 111,000 state-wide. Moreover, the same population is expected to increase by 60% between 2004 and 2020, mainly in areas already densely populated but also in rural areas that have too little access to full opportunities in higher education. The Arizona university system must take very deliberate steps to accommodate the high number of additional students who are likely to qualify for admission by current standards over the next decade and a half, either as first-year students admittedly directly or as transfer students from community colleges or from out of state.

We collectively believe that, if we can assume adequate state- and tuition-based funds for personnel, facilities, and infrastructure being made available over that time, the Arizona University System can accommodate the likely increase in qualified students across the next fifteen years. In addition to planning for growth at various rates on *all* of our original and our newer campuses, we are working together with another state system of higher education to which we are more and more closely tied: the Arizona community colleges (many rapidly growing themselves). At the same time, we are substantially increasing our offerings in distance education from all three universities, so much so that we can live up to a phrase used on at least one of our campuses: "Anyplace Access for Arizonans" for a broad range of classes and degree programs.

The Legacy of Redesign

In 2005 The Arizona Board of Regents endorsed a new approach to Arizona Higher Education, differentiating the missions of its three research universities to better position the system to increase access, enhance the diversity of its student body, and to reduce the reliance on heavily research-focused institutions. An important aspect of this University Redesign effort was continuing and strengthening the Universities' collaboration with Arizona community colleges. Ensuring efficient and smooth articulation is the first step, and it is one the Universities are committed to maintaining and improving. Equally important, however, is developing partnerships of every type, for example: education centers on community college campuses, 2+2 models, and joint enrollment

programs, all to increase access to an affordable baccalaureate degree for Arizona citizens.

These expanding efforts are wide-ranging indeed. All three Universities abide by statewide transfer articulation agreements with Arizona community colleges, and they have all established numerous partnerships that augment this basic relationship. Northern Arizona University (NAU) has the broadest mission of the three universities, serving students through distance learning in every county of Arizona, as well as establishing a physical presence on community colleges around the state, starting with its first branch campus in Yuma but expanding well beyond that even now. Arizona State University (ASU) is focused primarily on growing close partnerships with community colleges in the Phoenix metropolitan area, primarily the Maricopa County Community College District (MCCCD) and including Pinal County with Yavapai Chino Valley as a secondary partner. ASU has also embarked on an ambitious distance learning effort to open even more options for access to the baccalaureate. The University of Arizona's (UA) efforts are primarily focused on a joint enrollment program with Pima Community College, but UA South, based in Sierra Vista, also has a formal 2+2 agreement with Pima Community College East as well as Cochise Community College. On top of all this, the three Universities offer distance learning and continuing education through the Arizona Universities Network (AZUN), which provides access to a wide range of baccalaureate and master's degrees.

State-wide Articulation and Transfer

The three Arizona Universities wholeheartedly support the academic and technological aspects of the transfer process. Each University works with the Arizona Transfer Articulation Support System (ATASS); sends representatives to the Academic Program Articulation Steering Committee (APASC), which oversees the statewide articulation process; implements the Arizona General Education Curriculum (AGEC); regularly reviews and updates innumerable courses for inclusion in the Course Equivalency Guide (CEG); continually updates major information/guides for transfer students; and sponsors faculty participation in the 38 statewide Articulation Task Forces (ATFs), that is, discipline-specific faculty committees that meet once or twice a year to discuss course and program issues related to transfer. Through these efforts, the Arizona Universities and Community Colleges maintain strong articulation agreements and ease the transfer of all Arizona Community College students to the Universities.

NAU and ASU also have Associate in Transfer Partnership (ATP) degree agreements with Community Colleges. This degree is developed specifically for community college students who have an identified major and have selected the baccalaureate degree-granting institution to which they intend to transfer. The Associate in Transfer Partnership degree is an articulated academic program of study established among the student, the baccalaureate degree-granting institution selected by the student, and the primary Community College the student attends. The program of study will "parallel" the student's four-year degree as designated by the baccalaureate degree-granting institution.

Another important innovation is ASU's critical tracking project, being instituted for fall 2007, which will greatly improve degree and course planning for all students, including

transfer students and community college students prior to transfer. The computerized tracking program will allow students to assess in real time the applicability of their coursework to any ASU major. Students will also receive an individualized printout indicating the courses that the students should take for their chosen major on a semester by semester basis.

In addition to transfer articulation and the other efforts described above, each University has created special collaborations with select community college partners, including co-enrollment programs, that go far beyond transfer articulation and are responsive to the major recommendations made by the JCC. These partnerships are described more fully in the charts that make up the "Appendix" below.

Distance Learning

AZUN

The Arizona Board of Regents has established the Arizona Universities Network (AZUN) as a gateway to Arizona's three universities, all accredited by the Higher Learning Commission of the North Central Association of Colleges and Schools (NCA). AZUN combines areas of strength within each of the state universities, to make available unique programs that represent multi-university efforts and capabilities. The initiative creates educational opportunities that can be delivered to new populations of potential students, including those in rural areas or who are place-bound and/or time-bound, and those with physical disabilities that prevent residence on campus. AZUN provides a high level of innovative student services that enable distance learning students to be successful in completing their chosen degree programs.

Arizona Universities Network offers students access to distance-delivered degrees and certificates through the public higher education system now and to meet increased demand in the future. Students can earn an undergraduate degree, graduate degree, or professional certification from one of the three state universities. AZUN also serves students who seek non-degree options and those taking classes for personal or professional enrichment.

An AZUN web portal is designed to interconnect the universities' student information systems (SIS's) to provide automated admissions, registration, tuition/fee payments and financial aid information for current and prospective students interested in taking courses from the three universities. Phase one of the project, automated student admissions, was completed in December 2006. Phase two, now being developed, will consist of the automation of registration, tuition/fee payments, and financial aid information functions.

NAU

Northern Arizona University Extended Programs/Distance Learning serves students throughout Arizona by providing high-quality university programs and service in 38 local communities and through technology. Historically, NAU has met statewide demand fro extended access to the baccalaureate with modes of

instructional delivery changing over time. In fall 2005 1,318 students were enrolled at NAU in fully-online degree and certificate programs; by fall 2006 this number increased to 1,780 students, a 35.1% increase. During that semester 290 Web sections were offered. The vast majority of NAU's web courses are taught by full time faculty at the Flagstaff campus, giving students around the state access to outstanding tenured and tenure-track faculty members. In addition to online offerings, 61% of off-campus courses are taught by faculty in traditional classrooms located around the state. Over the past ten years, NAU saw an increase of 52% in total students served, growing from 4,698 in 1996 to 7,119 in fall 2006.

During the ABOR System Redesign process in 2005, NAU identified a strategy of "Expand on Demand" as its response to help meet the higher education access needs of a rapidly growing state population. Rather than the traditional and more costly approach of "Build it and They Will Come" through which our state university and community college campuses were built, equipped and staffed, the NAU "Expand on Demand" initiative starts with leased facilities on community college campuses and in communities to serve smaller populations (up to about 300). As student and employer demand increases (from about 300 to 3,000 students), permanent state funded debt service facilities are constructed on jointly-shared community college campuses (similar to the Northern Arizona University and Arizona Western College shared campus in Yuma). Where NAU's community college partners do not have the ability or desire to co-locate, NAU will build standalone facilities. As student demand reaches critical mass (3,000 or more students) a branch campus will be developed. This cost-effective strategy has the added benefit of spreading the state investment over many years.

Yuma

The partnership with Arizona Western College (AWC) in Yuma will expand to meet the needs of this rapidly growing community. The recent Board approval of Yuma as Northern Arizona University's first regional branch campus strengthens NAU's commitment to serving the citizens of Yuma in partnership with Arizona Western College. The following are example initiatives that will reinforce the overall partnership resulting in enrollment increases from 700 students today to 1,000 by AY 2009-2010: establishment of new programs at the Yuma site, especially professional programs in fields such as allied health sciences, business, teacher preparation, and environmental sciences that will benefit the local community; the construction of an applied research facility; the hiring of new faculty with contracts clearly anchored to the Yuma campus; and the establishment of a joint admission program allowing students to simultaneously enroll at AWC and NAU. Legislative budget requests and reallocation and reinvestment of tuition revenues will provide funding to fuel the growth. A total of $1.25 million in additional base budget funding will be needed to accomplish the growth goal of 1,000 students.

Expansion in Urban Areas

The metropolitan areas of Phoenix and Tucson are key markets for off-campus education. NAU programs will be offered throughout the Phoenix area, both in partnership with the Maricopa County Community College District (MCCCD) campuses and as standalone degrees. The university is working with MCCCD to establish an NAU presence on every Maricopa college campus so that students can complete a bachelor's

degree without leaving the local campus. NAU will soon occupy a highly visible facility on I-17 in north Phoenix. Education degrees are a strength for NAU in the Valley, although programs in business, health care and professional fields are being added as well. New articulation agreements allow for 75-90 hours of transfer and workplace credit in select degree programs. Program offerings in Tucson will be similar to those in Phoenix. NAU will expand operations at the north Tucson location and acquire other highly visible leased/owned facilities in east and central Tucson as well as continue to explore development of a campus in Marana.

Expansion in Rural Areas

Web offerings have allowed NAU to dramatically expand the number of available programs in the last few years by aggregating students from the entire state into a single "cohort" and thereby reducing the cost per student. Students at the average rural site chose from a handful of programs seven years ago. Today, students at the smallest rural sites now have access to close to 50 degree and certificate programs. NAU will continue to expand Web-delivered programs for both rural and urban markets. As communities grow large enough to support face-to-face programs, NAU will expand its offerings and physical presence to meet those needs.

In Prescott and the Verde Valley, NAU is working to grow to approximately 500 students by AY 2009-2010. A renewed partnership with Yavapai College is helping to spur that growth. In 2006 NAU established a presence on the Prescott campus, committed to joint marketing initiatives, and approved a dual admission policy. A college liaison and a faculty coordinator have been appointed by Northern Arizona University to direct this partnership, and an assessment of programmatic needs to serve the community is underway.

ASU

As part of ASU's commitment to access, ASU will grow its campus-based student population to 90,000 by 2017 as well as transform its distance learning and online operations by expanding from the current 20,000 students (head count) to serve 100,000 new students within the next decade. The ASU School of Extended Education (SEE) provides a distribution channel for distance education, and is intimately involved in all of ASU's unique collaborations with its community college partners. As the School transforms continuing/distance education the principles of the New American University will be embraced, including access to a quality education, and impact through flexible delivery. Currently, ASU offers 20 degrees through online & distance learning. As part of its expansion of its distance learning operations, at least one online Bachelor's degree, one Master's degree, and two certificate programs will be added to the existing program base in each of the next 5 years. All of the baccalaureate degree programs will be made available to community college students around the state, through AZUN as well as through ASU.

As ASU develops partnerships with select community colleges, particularly in Metro Phoenix and its immediate environs, the SEE is working closely with community college partners to develop televised and online instruction connected in such a way as to

support needed course and program offerings. That is, although there are few community college partners who individually have enough students to sustain full degree programs, linking cohorts from different community colleges to these course/degree offerings will allow enrollments to reach a magnitude that will to support the planned expansions.

ASU is also working, beginning with the Maricopa County Community College District (MCCCD)/ASU Alliance, to create Alliance faculty (from MCCCD and ASU) who will eventually allow community college students to take at least a full third year, and possibly a fourth year, of courses on the campuses of their community college.

UA

The UA offers distance learning education towards degree programs that are designed for specific markets. One such market is students across all Arizona community colleges and universities who seek online versions of General Education or high-demand undergraduate courses through AZUN. U of A provides 22 such classes, but its principal distance exports are for specific professional disciplines that have shown a need for them in Arizona, and sometimes around the world. Although these have primarily been for graduate degrees and certificates, and the U of A will continue to offer distance education in response to market demand, there are plans to expand support for community college and distance education partnerships to meet the needs of an increasing transfer population. U of A's expansion in this area will be driven by the capacity to recover increased costs through tuition and student volume, as well as increased revenue from self-supporting, market-driven distance offerings.

More specifically, the U of A Outreach Division in Academic Affairs is proposing to increase the offerings of courses and programs by the development of a "generator fund" that pays for course development upfront. Further, the U of A Outreach Division is proposing a model whereby the university employs an academic professional stationed at four community college campuses around the state: Central Arizona College, Eastern Arizona College, Arizona Western College, and Mesa Community College. These purpose of these positions is to serve as a portal for the academic program at the U of A, to provide initial advising, program and financial aid information, and to serve as a liaison between the community college and the university.

"Expand on Demand" System-wide

Although NAU, quite rightly within its distinctive mission, is the system leader in this initiative, the entire Arizona University System can "expand on demand" to meet the needs of increasing numbers of college-age *and* "new traditional" students in the state. The universities clearly have been aggressive (as the following Appendix displays) in developing numerous close partnerships with community colleges involving streamlined pathways, advising coordination, and co-location to expand 2+2 and even 3+1 opportunities that did not exist a decade ago. As more students come into community colleges and choose to take advantage of these programs, their tuition dollars and state money for enrollment growth can support the movement of *all* these qualified students into university programs from community

college course work. What the students must do on *their* side is qualify for those transfer pathways and steps, and different levels of qualification can lead them into the different kinds of programs suited to them at the Universities' multiple campuses across Arizona.

Meanwhile, the distance education programs can provide more and more course work for students anywhere in the system, especially when particular degree-program or class demands are identified. The University system can bring offerings anywhere in Arizona where a cohort of students is able (often with financial aid, of course) to pay for some of the costs, either for self-supporting courses or for courses or programs available through regular tuition and the increases that accrue from enrollment growth. *We therefore believe that the Universities are fully prepared for the expansion necessary to provide access to the baccalaureate for the increasing numbers of Arizona students who will qualify to move on to upper division education.*

Appendix:

Existing University-Community College Partnerships in Arizona

The following list contains information about the current partnerships – beyond just normal transfer pathways -- between the Arizona Universities and each of the Community Colleges around the state. These show *extensive* partnerships, with strong overall financial contributions from the universities, that greatly expand degree opportunities for students now (or soon to be) enrolled initially in Arizona community colleges. These are also expandable to serve more students, in almost every case, if the students meet the academic qualifications for at least normal progress.

Arizona Western College

ASU

Associate in Transfer Partnership Degree (ATP)

The Associate in Transfer Partnership degree (ATP) is an associate degree offered by an Arizona public community college based on a transfer articulation agreement with Arizona State University (ASU). It is for students who have identified a major and plan to transfer to ASU. It parallels the program of study for the Freshman and Sophomore lower division degree requirements at ASU. The ATP provides for exemption from ASU admission requirements for students who complete the degree with a minimum cumulative GPA 2.0 (4.0 = A) for Arizona residents and a minimum cumulative GPA 2.5 for non-residents. The ATP degree does not assure admission to any specific program at ASU.

- http://www.asu.edu/provost/articulation/awc_main.html
- Affiliated costs: None

NAU

Northern Arizona University has a branch campus at Arizona Western College in Yuma. Students complete their first two years at AWC and seamlessly transfer to locally offered or online programs at NAU. Local baccalaureate programs include: Bachelor of Arts in Liberal Studies (BAILS), Bachelor of Arts (BA) Psychology, BA Spanish, Bachelor of Applied Science (BAS) Computer Technology, BAS Early Childhood Education, BAS Health Sciences, Bachelor of Science (BS) Criminal Justice, BS Elementary Education, BS Secondary Education, BS Environmental Science, BS Business Administration, BSW Social Work. NAU currently has 416 students enrolled in undergraduate programs in Yuma and La Paz counties.

- For a complete list of online degree options available to AWC students see: http://www.distance.nau.edu/campuses/campus_degrees.aspx?campus=DISLN

Central Arizona College

ASU

Transfer Advantage Partnership (TAP)

Conceptualized throughout the 2005-2006 year, this partnership boasts similar benefits as those outlined in the ASU/MCCCD Alliance, but the degree programs offered will be somewhat different and include: Early Childhood Education, Special Education, Bachelor of Interdisciplinary Studies (BIS), Honors, and possibly Nursing (RN to BSN), secondary education in math & science, and psychology. The official TAP agreement was signed by both institutions on April 28, 2006 at Central Arizona College. Both Early Childhood Education (ECE) and BIS will begin offering courses on the CAC campus, starting this Spring 2007. Special Education (SPE) will begin offering courses televised through ITV on the CAC campus starting Fall 2007. BIS students will be able to transfer up to 75 credit hours, and ECE students are being granted unique course articulation agreements in order to increase the transferability of their AAS credits.

Currently, 13 students have declared an intent to participate in the TAP program. Marketing for all 3 programs will begin Fall 2006.

- http://uc.asu.edu/cac-tap/
- Affiliated costs: $34,400 (Includes portion of Student Services Coordinator, employee related expenses, and operating and marketing costs.)

Pinal Partnership

Partnership began in 2003 as a teacher post-baccalaureate program targeting Spanish speaking residents of Pinal county who had bachelor degrees from Latin American countries. The program has evolved into a post-baccalaureate/Master's teacher preparation program that is complimented by ASU's BEST teacher induction program. The elementary education degree/certification program is open to any/all Pinal county residents.

- http://www.poly.asu.edu/ecollege/education/postbacc.htm
- Affiliated costs: $76,800 (Includes salaries and employee related expenses for TEACH ME coordinator and recruiter.)

Title V Cooperative Grant

This $3 million dollar grant attacks the unacceptably low rates at which Hispanic and other low-income, rural students persist and succeed in post-secondary settings. Obstacles that the grant will address includes Pinal County's vast geography, which complicates access to degree programs; inadequate technology and support for long distance learning; inadequate professional development in instruction via long distance for faculty; limited technical support for the users of distance technology; and limited access to student, transfer, and academic services. CAC has hired a Director of Title V Cooperative, Stefanie Jones-Campbell.

Associate in Transfer Partnership Degree (ATP)

- http://www.asu.edu/provost/articulation/cac_main.html

NAU

NAU maintains three full time staff members in the University Center at Central Arizona College's Signal Peak campus, and provides local advising at the Aravaipa and Superstition Mountain campuses. Locally offered undergraduate programs at Signal Peak include the BS Elementary Education, BS Business Administration, BAILS Sociology, and BAILS Learning & Pedagogy. The BS Elementary Education and BAILS Learning & Pedagogy are available through interactive television at the Aravaipa Campus, and locally through Apache Junction Unified School District for CAC's Superstition Mountain students.

Currently, NAU has enrolled over 200 students in locally offered baccalaureate programs in Pinal County, and 66 in online programs. Nursing students at CAC may transfer up to 82 hours into NAU's RN to BSN online degree program.

- Online degrees available to CAC students are listed at: http://www.distance.nau.edu/campuses/campus_degrees.aspx?campus=DISLN

Cochise College

ASU

Associate in Transfer Partnership Degree (ATP)

- http://www.asu.edu/provost/articulation/coch_main.html

NAU

Students in Cochise County access NAU programs through our Tucson and Thatcher offices, and through online programs. Currently 44 students in Cochise County are pursuing NAU degrees.

- Online degrees available to Cochise College students include: http://www.distance.nau.edu/campuses/campus_degrees.aspx?campus=DISLN

UA

Formal 2+2 Agreement

UA South has formal 2+2 agreements with Pima Community College East and Cochise College in Sierra Vista. These agreements assure students of direct transfer admissions and transfer-oriented advising and counseling services, all of which enable the unencumbered movement of student from those community college sites to UA South degree programs at any or all of its locations.

- Affiliated costs: The particular 2+2 relationships occupy more the half the workload of four Academic Affairs staff members in Tucson and a considerable percentage (up to 45%) of the working time spent by nine Student Academic Support staff members based in Sierra Vista. When the correct percentages of these salaries are added together, the annual expenditure for formal 2+2 relationships at UA South is $940,335 annually.

Coconino Community College

ASU

Associate in Transfer Partnership Degree (ATP)

- http://www.asu.edu/provost/articulation/coco_main.html

NAU

NAU works closely with Coconino Community College. The university provides a long-term lease for $1/year for the land on which the CCC campus is located. NAU also extends residential campus services to CCC students including meal plans, housing, student union, intramural athletics, and library services. In other parts of the county, NAU serves CCC students outside of Flagstaff through offices on the Page campus, and at Tuba City. Currently 123 students in Page, Tuba City, Fredonia, Tonalea, Leupp, and other remote parts of the county are pursuing degrees through NAU locally or online.

- Local and online degrees available to CCC students are listed at: http://www.distance.nau.edu/Campuses/MapSearch.aspx

Dine College

ASU

Diné Teacher Education Program

The Dine Teacher Education Program (DTEP) is a B.A. degree-granting program in Elementary Education with a specialization in Navajo language, culture, history, and philosophy. The program is a partnership effort between Dine College, formerly Navajo Community College, and the Mary Lou Fulton College of Education. DTEP began in Fall 1996, with a first cohort of teacher education students. The program is staffed by both ASU and Dine College faculty on the Dine campus in Tsaile, Arizona. There are currently 12 students in this program and 60 graduates.

- http://coe.asu.edu/oss/partner.html#dine

Associate in Transfer Partnership Degree (ATP)

- http://www.asu.edu/provost/articulation/dine_main.html

NAU

NAU serves Dine College students through our offices at Kayenta, Tuba City, Ft. Defiance, Ganado, and our newly expanded office in Chinle. 98 undergraduate students are currently enrolled through these NAU sites. The BS in Elementary Education and the BAILS Learning & Pedagogy are offered via interactive television at all these sites. NAU has just completed an agreement with Dine College to articulate the AA ECE (Early Childhood) program with the BS in Early Childhood Education,

which is now available at Chinle, Kayenta and Tuba City. The Bachelor of Science in Nursing has been offered on the Navajo Nation since 1993, with new student cohorts starting each year. This program was recently relocated from Ganado to expanded facilities at St. Michael's.

- For programs and services that serve Dine students see: http://www.distance.nau.edu/campuses/campus_degrees.aspx?campus=CHINL&type=nearby

Eastern Arizona College

ASU

Associate in Transfer Partnership Degree (ATP)

- http://www.asu.edu/provost/articulation/eac_main.html

NAU

NAU has offices on the EAC main campus in Thatcher, as well as on the Payson campus. We also serve EAC students in Globe through an office and ITV classroom there. At Thatcher, NAU offers the BS Elementary Education and BS Business Administration along with various endorsement and certificate programs. The university enrolled 175 students in Gila, Graham, and Greenlee counties in Fall 2006. Nursing students at EAC can transfer up to 82 hours into the NAU online RN to BSN program.

- Programs for EAC students can be found at: http://www.distance.nau.edu/campuses/campus_degrees.aspx?campus=THATC&type=onsite

Maricopa County Community College District

ASU

MCCCD/ASU Alliance

The Alliance Program is a unique partnership between the Maricopa Community Colleges and ASU, designed to increase the number of students who will graduate with associate and bachelor degrees. Degrees being offered through the Alliance include Elementary Education, Nursing, Manufacturing Technology, Honors, and the Bachelor of Interdisciplinary Studies (BIS) in Organizational Studies. The BIS is an online degree in collaboration with Rio Salado College; both the BIS and the BSN in Nursing accept 75 MCCCD credits. Planning principles include collaboration in planning, seamless transitions for students throughout academic career, joint programs & services that are "transparent" to students, and joint admission to community college & university with same opportunity to be admitted to upper-division programs as native university students. MCCCD students in the Honors Alliance will receive an ASU scholarship upon transfer if they maintain a 3.75 GPA. Courses will

be delivered using various models – online, hybrid, off-site, on MCCCD college campus, or at ASU. At the point where MCCCD students join the ASU-MCCCD Alliance they are considered co-enrolled and receive the full benefits from being a student at each institution.

Students registered in the Alliance, as of November 2006:

- BIS in Organizational Studies: 26
- Elementary Education: 216
- Honors: 244
- Manufacturing Technology: 3
- Nursing: 333
- Total: 822

Breakdown of participation by campus:

- CGCC: 112
- EMCC: 39
- GWC: 76
- GCC: 139
- MCC: 154
- PVCC: 23
- PC: 84
- RSC: 43
- SCC: 67
- SMCC: 3

- Affiliated costs: $82,700 (Includes salaries, employee related expenses and operating funds supporting the Alliance leadership.)

Associate in Transfer Partnership Degree (ATP)

- http://www.asu.edu/provost/articulation/maricopa_main.html

Dynamic Learning Program

The Dynamic Learning Program is a structured two-step Bachelor's Degree Program for future teachers. Students complete the two-year Dynamic Learning Teacher Education Program at SMCC and then transfer to the Initial Teacher Certification Program at ASU.

- Coursework fulfills most prerequisite requirements for Elementary, Bilingual/ESL, Early Childhood and Special Education Programs for ASU.
- Most coursework is taught in integrated learning communities.
- Students are placed in a cohort of about 30-40 with whom they stay for the majority of their classes.
- Students conduct internships in area schools as part of their curriculum.
- http://coe.asu.edu/oss/dlp/
- http://www.southmountaincc.edu/Programs/College_Programs/Teacher_Education/

- Affiliated costs: $50,800 (Includes salary and employee related expenses for recruiter in Mary Lou Fulton College of Education/ Student Services Office (recruiter also supports the UTC, Mesa Grow Your Own, and all other community college student recruitment.)

Project Teach

Project Teach will identify, recruit, and retain undergraduate students from historically under-represented backgrounds into the teaching profession who are interested in seeking the Bilingual Education Endorsement. Project Teach, in collaboration with Office of Student Services Personnel, will provide academic guidance and mentoring to project participants in order to ensure a successful transition to Arizona State University and the Initial Teacher Certification Program (ITC) in the College of Education. The four Partnership Community Colleges are: Chandler-Gilbert Community College, Mesa Community College, Phoenix College, & South Mountain Community College.

- http://coe.asu.edu/teach/cc_students.html
- Grant funded

Project Enable

Project ENABLE seeks to identify, recruit, and retain undergraduate students from historically under-represented backgrounds into the teaching profession who are interested in seeking the *Bilingual Education Endorsement.* Project ENABLE's staff provides academic guidance and mentoring to these participants to help with a successful transition to a college and/or university setting. Students from these campuses participating in Urban Teacher Corps, Dynamic Learning, or Multicultural Education Programs can apply to Project ENABLE. The four partnership community colleges are: Chandler-Gilbert Community College, Mesa Community College, Phoenix College, & South Mountain Community College.

- http://coe.asu.edu/enable/cc.php
- Grant funded

ASU's Polytechnic campus Partnership in Baccalaureate Education

ASU has partnered with Chandler-Gilbert Community College (CGCC) in providing students a baccalaureate education at the Williams Campus in Mesa. The partnership allows students to take a combination of courses at ASU and CGCC, and graduate in four years with a bachelor's degree from ASU. In fall 2006 approximately 630 students were co-enrolled; in spring 2007 there were 850 students co-enrolled.

- http://www.poly.asu.edu/coenrollment/
- Affiliated costs: Incorporated into costs of day/day offerings within Polytechnic teacher program.

Mesa Grow Your Own

The "Mesa Grow Your Own Teachers" Program (MGYO) is designed to address nationwide concerns about teacher shortage and quality, in addition to meeting other key objectives. MGYO is a "grow-your-own-teachers" program currently underway in the Mesa Public School District (MPS) in collaboration with Mesa Community College, Tempe (MCC); Mesa Community College at the Red Mountain Campus (MCC); Chandler-Gilbert Community College (CGCC); Arizona State University, Polytechnic

and Tempe. Currently 41 students are being served; there are 14 graduates from this program.

- http://www.mpsaz.org/mgyo/overview.html
- Affiliated costs: Recruiter in Tempe College of Education/ Student Services Office (recruiter also supports the UTC, Mesa Grow Your Own, and all other community college student recruitment.

Aspire to Teach; Inspire, Teach; The Teacher Connection

The College of Teacher Education and Leadership at ASU's West campus has three partnerships with community colleges and high school districts to mentor high school students interested in a teaching career. Students are identified in the junior year of high school and mentored through the junior and senior years, steered to the cooperating community college for two years and then to ASU's West campus teacher preparation program to complete their bachelor degree in education. These are also called 2+2+2 programs.

- Aspire To Teach -Glendale Community College with Glendale Union High School District (117 students total on a grant; 101 graduates; grant ended)
- Inspire, Teach - Estrella Mountain Community College with Agua Fria, Tolleson, Phoenix Union, Dysart, and Buckeye High School Districts (95 graduates; 8 students currently enrolled)
- The Teacher Connection - Paradise Valley Community College with Paradise Valley and Cave Creek High School Districts (42 graduates; 4 currently enrolled)
- http://www.asu.edu/president/commcollege/ctel.html
- Affiliated costs: None

GCC-ASU Partnership

A partnership between Glendale Community College and ASU's West campus, the GCC-ASU Partnership offers freshman- and sophomore-level courses through cooperation with Glendale Community College on the ASU West campus. Students work with an ASU advisor. Students pay GCC 2005-2006 tuition and get all the benefits of both campuses.

- http://www.west.asu.edu/uc/ucc.htm
- Affiliated costs: None

Urban Teacher Corps

The Urban Teacher Corps is a partnership program that works toward increasing the number of qualified teachers, funded from various sources including the ASU Mary Lou Fulton College of Education, the ASU University College School of Extended Education, and, in the past Phoenix College. UTC is a flexible education program designed to meet the needs of adults who are currently working within designated public educational systems as instructional assistants and other support service personnel. Students begin taking their general studies at the community college level then transfer to Arizona State University.

The designated UTC elementary school districts include: Balsz, Creighton, Isaac, Madison, Murphy, Osborn, Phoenix, and Roosevelt. These districts provide release time and/or financial support for the participants. Phoenix College and ASU provide advertising, mentoring, professional growth seminars and offer revolving loans.

Students agree to maintain a steady enrollment toward the completion of their goals and upon degree completion, to work as teachers for at least three years in their sponsoring districts. There are 91 UTC graduates; 26 students are currently enrolled.

- http://coe.asu.edu/oss/utc/
- Affiliated costs: Recruiter in Tempe College of Education/ Student Services Office (recruiter also supports the UTC, Mesa Grow Your Own, and all other community college student recruitment. Scholarships also funded by Tempe College of Education and the School of Extended Education for UTC students: $1,750

University College Transfer Success Courses

University College is currently partnering with Phoenix College and South Mountain College to offer "Transfer Success" courses on the community college campuses. Courses are taught by UC staff.

- Affiliated costs: Release time for director of Transfer Center

NAU

Memorandum of Understanding

In April of 2006, NAU signed an agreement with Maricopa Community College District to pave the way for an NAU presence on every Maricopa college campus. The "Maricopa/NAU Connection" partnership will foster seamless articulation by encouraging the completion of AA and AAS degrees which transfer to locally offered BA, BS, and BAS degrees through NAU. While NAU has several thousand graduate students in the county, most undergraduate programs only began in 2003 under the ABOR Changing Directions policy. NAU currently serves 502 undergraduate students in Maricopa County pursuing locally offered programs, and 241 in online degree completion programs, and the majority of these students have credits or degrees from Maricopa colleges.

District-wide Articulated Programs

NAU received curriculum approval this fall to articulate five new AAS degrees with the BS Health Sciences: Respiratory Care, Medical Assisting, Physical Therapy Assisting, Paramedic Care, and Surgical Technology. Each of these AAS degrees, along with the current Diagnostic/Medical Imaging program at Gateway Community College, will allow for up to 81 hours of transfer credit into the NAU BS Health Sciences program. Students in the NAU Dental Hygiene Degree Completion program can receive up to 90 hours toward the degree from credit for transfer and licensure. In addition, NAU will seek Board of Regents approval for a similar articulation of up to 82 hours in transfer for nursing students into the BSN.

Associate in Transfer Partnership (ATP) Degree

NAU and MCCCD signed an ATP agreement in 2005 as a pathway from the MCCD Early Childhood Teach Education program to the BS Early Childhood Education program at NAU. Campuses offering the associate program in Maricopa include Glendale, Mesa, Phoenix, Rio Salado, and Scottsdale.

- For details, see: http://www.maricopa.edu/academic/curric/atp/nau/ecte.doc

Campus Presence

NAU has full time staff located on eight of the Maricopa campuses, and South Mountain will be the ninth when construction is completed on an NAU facility in fall 2007.

- On-site and online programs for MCCD students can be found at: http://www.distance.nau.edu/campuses/map_phoenix.aspx

Chandler Gilbert Community College

NAU has an office at CGCC with a full time program coordinator and a full time faculty member. Currently the BS in Elementary Education and the BAILS Organizational Communication degrees are offered locally. This fall 69 students are enrolled in the programs.

Estrella Mountain Community College

NAU serves EMCC students from its nearby West Valley office at 103rd Avenue and McDowell Road in Avondale. The West Valley office has a program coordinator assigned half time to EMCC, and she regularly visits the campus to meet with students and promote NAU undergraduate programs.

Gateway Community College

NAU has an office on the campus of Gateway Community College and a full time program coordinator on the campus. The University signed an articulation agreement with the college in 2004 which allowed for up to 81 credit hours to transfer from Gateway's Diagnostic/Medical Imaging and Medical Radiography programs to the BS Health Sciences at NAU. 38 students are currently enrolled in the program.

Glendale Community College

NAU has a full time program coordinator and two faculty members at GCC. The BS Speech Communication program began on campus fall 2006 and the BS in Elementary Education will begin fall 2007.

Mesa Community College

NAU has an office on the MCC main campus with a full time program coordinator, and offices at the Mesa Downtown campus for three full time faculty members. Undergraduate programs offered at the Downtown campus include BAS Administration of Justice and BAILS Organizational Communication, with the BS Elementary Education scheduled to begin fall 2007. 22 undergraduate students are currently enrolled at the Mesa Downtown campus.

Paradise Valley Community College

NAU has been located on the Paradise Valley Community College campus since the early 1990s. Locally offered undergraduate programs include the BS Business Administration, BS Elementary Education, BS Early Childhood Education, BAILS Organizational Communication and BAILS Sociology programs. The staff includes an area coordinator, three program coordinators, a financial aid counselor, academic advisors, and support personnel, along with three full time faculty members. 544 undergraduate students are currently enrolled at NAU-Paradise Valley. NAU is also active in the North Valley educational consortium, Learning Connections, which is an

active partnership with Paradise Valley Unified School District, Deer Valley USD, Cave Creek USD, Paradise Valley Community College, Rio Salado College, and ASU West.

Phoenix College

NAU has a full time program coordinator at Phoenix College, and offers the BS Elementary Education there. 34 students are currently enrolled in the program. Discussion is underway to add Early Childhood Education programs in 2007.

Rio Salado College

In addition to partnering with Rio Salado College on the ATP in Early Childhood Education, Rio Salado hosts NAU master's and doctoral programs in Educational Leadership to prepare community college professionals for future leadership positions within the district.

Scottsdale Community College

NAU has four full time staff members at Scottsdale Community College. We have articulation agreements for the BS Hotel& Restaurant Management which accepts up to 75 hours in transfer from SCC, and the BS Interior Design program. In addition to these two programs, we will offer the BS Elementary Education starting fall 2007 and several master's degree and certificate programs. 137 students are currently enrolled in program at NAU-Scottsdale.

South Mountain Community College

NAU currently offers the BAS in Early Childhood Education at South Mountain Community College, and the BS Elementary Education will begin fall 2007. 36 students are currently enrolled in the Early Childhood program. Construction has begun on a facility for NAU on the SMCC campus that will provide classrooms, interactive television, and faculty and staff offices.

Mohave Community College

ASU

Associate in Transfer Partnership Degree (ATP)

- http://www.asu.edu/provost/articulation/mohave_main.html

NAU

NAU has offices on all three of the Mohave Community College campuses at Kingman, Bullhead City, and Lake Havasu City. Locally offered programs include BS Elementary Education and BAILS Learning & Pedagogy at all three sites, and BAILS Sociology at Kingman and Bullhead. NAU accepts 82 credits in transfer from the MCC nursing program to the BSN, and up to 90 hours in transfer from the Dental Hygiene program at MCC to the BS Dental Hygiene degree completion program. 280 students are currently enrolled in local or online NAU programs in Mohave County.

- Local and online program options for MCC students can be found at: http://www.distance.nau.edu/campuses/campus_detail.aspx?campus=KINGM

Northland Pioneer College

ASU

Associate in Transfer Partnership Degree (ATP)

- http://www.asu.edu/provost/articulation/npc_main.html

NAU

NAU serves Northland Pioneer College students through offices at Show Low, Holbrook, Kayenta, Keams Canyon, and Whiteriver. Locally offered baccalaureate programs include BS Elementary Education, BAILS Learning & Pedagogy, and BS Early Childhood Education. NAU accepts up to 81 hours in transfer credit from the NPC nursing program to the NAU BSN program. NAU has also articulated the NPC AAS/Computer Technology in Business with the BAS/Computer Technology degree program. NAU serves 188 students in the NPC service area.

- Programs available to NPC students can be found at: http://www.distance.nau.edu/Campuses/MapSearch.aspx

Pima Community College

ASU

Associate in Transfer Partnership Degree (ATP)

- http://www.asu.edu/provost/articulation/pima_main.html

NAU

NAU is located on three Pima Community College campuses. Faculty offices are at the Northwest and the West campuses, and a large staff and faculty contingent are housed at the Community campus. NAU and PCC share a faculty line to deliver the Hotel & Restaurant Management program at the Pima Northwest campus. In addition, NAU recently opened a facility in North Tucson with staff, classrooms, interactive television, and a student computer lab.

Students in the NAU Dental Hygiene Degree Completion program can receive up to 90 hours toward the degree from credit for transfer and licensure. In addition, NAU will seek Board of Regents approval for a similar articulation of up to 82 hours in transfer for Pima nursing students into the BSN.

Locally offered baccalaureate programs include the BS Elementary Education, BAILS Criminal Justice, BAILS Organizational Communication, BAILS Sociology, BAS Early Childhood Education, BAS Justice Systems Policy & Planning, BS Hotel & Restaurant

Management, BS Interior Design, BS Business Administration, and BS Nursing, in partnership with Tucson Medical Center. In addition to over 600 graduate students, NAU has 580 undergraduate students in Tucson, with 186 enrolled in online programs, and 391 in locally offered degree programs.

- Baccalaureate program options for Pima students can be found at: http://www.distance.nau.edu/campuses/campus_detail.aspx?campus=TUCSN

UA

Transfer Strategies Course

STU210 is a joint PCC/UA course designed to help students effectively transition from a community college to a university. The course is jointly held at PCC and UA to facilitate the students' smooth transition. Course goals include successful transferring, obtaining community college/university resources, and facilitating transition procedures. Course content also includes policies and application activities for transferring to a university of college of choice. Through enrolling and successfully completing this course, prospective transfer students receive the following benefits: introduction to the university campus, academic advising by university advisors, satisfaction of new student orientation requirement, and priority registration status for classes when enrolling at the university. The University of Arizona transfer staff support the STU210 course through providing resources, acting as the central university point-of-contact, administrative assistance with room scheduling, checklists, forms documents, maintenance of database, list serves and communications as well as tracking and coordinating applications and admissions status. In close collaboration with transfer staff, UA academic advisors make regular visits to support STU210 students and provide major and coursework advising. STU210 has supported the PCC/UA articulation for several years, serving approximately 13% of the total transfer population from PCC.

The Program for Joint Admissions & Enrollment (PJAE)

This is a collaborative program between PCC and the UA that provides an opportunity for high school students admissible or admitted to the UA, who decide to enroll at Pima Community College with the intent to transfer to the UA, to be a part of the university community during their time at PCC. The UA and PCC invite Pima County students who are in the top 25% of their high school graduating class to participate in the PJAE. Once admitted to both PCC and UA, students have access to academic and financial aid advisors, may join clubs and organizations, and will receive UA and PCC student ID cards, with their attendant benefits, including library access at both campuses. In addition, the students may apply for UA residence hall space and use the UA recreation center. Approximately 50 students are accepted in the PJAE each year.

The "Achieving a College Education" (ACE) Program

ACE is a collaboration between PCC and the University designed to assist students from low-income, first generation and underrepresented backgrounds who rank in the middle quartile of their high school class to achieve a bachelor's degree. This 2+2+2 program, though not part of a formal agreement, assists students with the transitional process from high school to PCC and ultimately to the UA. Approximately 110

students in their sophomore year of high school are chosen from Pima and Santa Cruz counties to participate in ACE. The students in the program maintain continued contact with PCC and UA staff who work with them to provide college preparation information, admissions support and campus based programs.

Visits to Pima Community College

UA transfer counseling staff make regular visits to the various Pima Community College campus to offer advising, transfer evaluation, admission advice and recruitment information to interested students. During the course of an academic year, UA staff visit each campus approximately fifteen to eighteen times at each campus.

Formal 2+2 Agreement

UA South has formal 2+2 agreements with Pima Community College East and Cochise College in Sierra Vista. These agreements assure students of direct transfer admissions and transfer-oriented advising and counseling services, all of which enable the unencumbered movement of student from those community college sites to UA South degree programs at any or all of its locations.

- Affiliated costs: The particular 2+2 relationships occupy more than half the workload of four Academic Affairs staff members in Tucson and a considerable percentage (up to 45%) of the working time spent by nine Student Academic Support staff members based in Sierra Vista. The annual expenditure for formal 2+2 relationships at UA South is approximately $940,335 annually.

Yavapai College

ASU

Transfer Advantage Partnership (TAP)

Conceptualized throughout the 2005-2006 year, this partnership with Yavapai College, Chino Valley, is similar to those outlined in the ASU/MCCD Alliance, but degree programs offered in this partnership program will include Fire Service Management, Law Enforcement Management, Agribusiness, Operations Management, Residential Construction, Urban Horticulture, Environmental Tech Management, Bachelor of Interdisciplinary Studies (BIS), Honors, and possibly secondary education in math & science. Fire Service Management and Agribusiness degree programs began offering courses at Yavapai campuses in Fall 2006; Law Enforcement Management, BIS and Honors began in Spring 2007. The official TAP agreement was signed on August 4, 2006 at Yavapai College-Chino Valley.

Currently, 3 students have declared intent to participate, while several others have shown interest. Marketing for the Fire Service Management and Agribusiness is moving ahead. ASU course and program offerings at Yavapai College, Chino Valley were chosen at the request of the college, and do not duplicate NAU offerings in the area.

- http://uc.asu.edu.yc-tap

- Affiliated costs: $33,400 (Includes portion of Student Services Coordinator, employee related expenses, and operating costs.)

Associate in Transfer Partnership Degree (ATP)

- http://www.asu.edu/provost/articulation/yavapai_main.html

NAU

NAU and Yavapai College signed a Memorandum of Understanding in 2004 intended to establish an enhanced relationship to expand baccalaureate and graduate program access throughout the county. Since that time, NAU has moved into offices on the Prescott and Verde campuses of Yavapai College. Yavapai students can complete baccalaureate degrees locally in Elementary Education, Special Education, Learning & Pedagogy, and Business Administration. NAU accepts up to 82 hours in credit from the Yavapai College nursing program into the Bachelor of Science in Nursing, and a full time nursing faculty member will be locating in Prescott. Currently, NAU has 234 students enrolled in Yavapai County.

* Local and online program options for YC students can be found at: http://www.distance.nau.edu/campuses/campus_detail.aspx?campus=PRSCT

Programs not related to a specific community college

ASU

Hispanic Border Leadership Institute: Community College Leadership Academy

The Community College Leadership Academy at Arizona State University is dedicated to assisting community college institutions improve their delivery of services to the increasing population of students from diverse backgrounds. The purpose of the Community College Leadership Academy is to provide leadership training to mid-level community college administrators (particularly persons of color and women) who want to serve this growing population of students.

- http://www.asu.edu/educ/hbli/CCLA/CCLA.html

Head Start-ASU

Faculty from the Tempe Campus (Beth Swadener, Mary Lou Fulton College of Education and Jeanne Wilcox, College of Liberal Arts & Sciences) have received funding for a Head Start-ASU Latino focused Early Childhood Professional Development grant to assist high school teachers working with Latino/Hispanic families to obtain their four year degree (and certification) in early childhood education. In addition to funding for 40 Maricopa, Pinal and Gila county teachers to secure college-level teacher education training at community colleges and ASU, the project has also provided academic support and extra advising for 283 preschool teachers completing community college associate degrees and working in Arizona's lowest income areas including Navajo and Apache, Maricopa, Pinal, Gila and Pima counties. There are 37 current Head Start teachers enrolled at ASU in this program.

- Partially funded through a Health and Human Services grant.

ASU Transfer Center

ASU has established its first "Transfer Center" on the new downtown Phoenix Campus, and appointed a Director and staff. Eventually ASU will establish a transfer center on every campus. The Transfer Center is not only a place where potential transfer students can come to get advice and information, but is also conducting "Transfer Success" courses, and will be providing a wide range of programs for students before, during, and after transfer to ensure their successful transfer and ultimately their success at completing a degree at ASU.

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STATE BOARD OF EDUCATION &
STATE BOARD FOR VOCATIONAL AND
TECHNOLOGICAL EDUCATION

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September 6, 2007

The Arizona State Board of Education has initiated a review of current high school graduation requirements. As part of its process, the Board is soliciting public comment from key stakeholders, including the general public. The Board has undertaken this review of requirements recognizing that it is only the first of several steps in preparing our high school graduates for the 21st century. Certainly, there are infrastructure, including availability of qualified teachers, curricula, and student support issues that must also be addressed to ensure that students, school districts and charter schools can successfully meet increased expectations. The State Board recognizes that an increase in high school graduation requirements will have impact throughout the K-12 system.

Attached you will find a summary of the State Board's work to date. We are requesting that you read and consider the Board's initial proposal regarding how graduation requirements may be increased over the course of the next several years. In addition, to assist the Board in its deliberations, we are soliciting input in the following areas:

- Framing requirements as credits versus years, as in 4 credits of math versus 4 years of math;
- Using language that requires a student to earn a math credit during his/her senior year;
- Defining a student's ability to earn high school credit while still enrolled in middle school; and
- Adding more specificity to defining science credits.

There are several ways in which you may submit your comments to the State Board of Education. The attached information includes where to send written comments regarding the proposal. You may also choose to address the Board during one of its regularly scheduled or special study sessions.

Information, including minutes of past meetings of the State Board may be found on the State Board of Education's website at:
http://www.ade.az.gov/stateboard/ .

Sincerely,

Karen A. Nicodemus
President, Arizona State Board of Education

Tom Horne
Superintendent of Public Instruction

Vince A. Yanez
Executive Director, Arizona State Board of Education

ARIZONA STATE BOARD OF EDUCATION SOLICITS PUBLIC INPUT ON PROPOSAL TO INCREASE HIGH SCHOOL GRADUATION REQUIREMENTS

In April 2007, the Arizona State Board of Education adopted several priorities to guide its policy work, recognizing the interrelatedness of each priority. Responding to state and national calls for education systems to assess curricula rigor and student expectations, the Board chose to initiate discussion on increasing high school graduation requirements. As noted in numerous articles, beginning in the 1970s and more noticeably in the 1990s, a shift occurred in the American economy. Good jobs – those that allowed a family to participate as middle class citizens – required education and training beyond high school. Today, nearly every job that ensures some economic security requires higher levels of education. Studies undertaken specific to Arizona, a state with one of the fastest growing populations including students in the K-12 system, indicate that 98.4 percent of the fastest growing occupations paying a livable wage will require some education beyond high school. This projection, coupled with national studies that indicate over 80 percent of 8th grade students aspire to attend college, with a much lower percentage actually enrolling and successfully completing, has compelled the State Board of Education, as well as local district governing boards, to revisit how we may best prepare graduates for the real world of work and college. Equally important to economic and quality of life considerations is the centuries old understanding of the public education system's role of preparing an educated citizenry for full participation in a democratic society.

In June 2007, the Board held a special session focusing on Arizona's minimum high school graduation requirements (A.A.C. R7-2-302.) As part of its discussion, the Board considered recommendations of the Governor, Superintendent of Public Instruction and the findings of Arizona-focused, as well as national studies along with other states' efforts to align K-12 curricula and expectations to ensure graduates leave high school work- and/or college- ready for the 21st century. The Board also developed a process to ensure the input of key stakeholders, including other governmental entities, legislators, K-12 district officials, teachers, parents, students and the general public in the modification of existing minimum high school graduation requirement.

On August 10, 2007, the Board held a second special session on this issue and reached consensus on a proposal to increase graduation requirements. As drafted, the proposal is intended to balance statewide expectations with flexibility for local districts. It also recognizes the importance of creating multiple pathways for students to meet the proposed requirements. The Board's intent is to formally review and adopt modifications to the rule by December 30, 2007.

The State Board of Education through a series of outreach efforts is soliciting public input on proposed modifications as outlined below and also attached. The comments received will help guide the Board's final decision. Therefore, the Board is seeking input regarding those aspects of the proposal that are supported, as well as areas of concern. Information and opportunity for input is available through the State Board of Education's website at: http://www.ade.az.gov/stateboard/ .

Written comments may be mailed to:

Vince Yanez, Executive Director
Arizona State Board of Education
1535 W. Jefferson Avenue
Phoenix, Arizona 85007

Or by emailing: HighSchoolGraduation@azed.gov

Current Arizona Minimum High School Graduation Requirements (A.A.C. R7-2-302)

The Board establishes 20 credits as the minimum number of credits necessary for high school graduation to include:

1. Four credits of English or English as a Second Language, which shall include but not be limited to the following: grammar, writing, and reading skills, advanced grammar, composition, research methods and skills and literature. One-half credit of the English requirement shall include the principles of speech and debate but not be limited to those principles.
2. One and one-half credits in the instruction in the essentials, sources and history of the constitutions of the United States and Arizona and instruction in American institutions and ideals and in the history of Arizona.
3. One credit of world history/geography
4. Two credits of mathematics taken consecutively beginning with the 9th grade, and the course content shall include Number Sense; Data Analysis and Probability; Patterns, Algebra and Functions; Geometry; Measurement and Discrete Mathematics; and Mathematical Structure/Logic
5. Two credits of science
6. One credit of fine arts or vocational education
7. Eight and one-half credits of additional courses prescribed by the local governing board subject to the approval of the State Board

Summary of Proposed Rule Modification

1. Beginning with the Graduating Class of 2012, minimum high school graduation requirements will be modified as follows:
   - Math credits will increase from 2 credits to 3 credits
   - Social Studies will increase from 2.5 credits to 3 credits, consisting of one credit of American History, one credit of World History, one-half credit of government and one-half credit of economics. Economics may be taught in departments other than social studies as determined by local district governing boards
   - Elective credits will decrease from 8.5 credits to 7 credits

2. Beginning with the Graduating Class of 2013, minimum high school graduation requirements will be as follows:
   - Math credits will increase from 3 credits to 4 credits, to include Algebra I, Geometry, Algebra II or other courses that include Algebra I as a prerequisite. Additional courses in math may include courses in other subjects designated by the State Board of Education as having substantial mathematics content, such as career/technical education, the arts or economics. Using a State Board of Education approved process, students who meet specific requirements may pursue a Personal Curriculum pathway to fulfill math requirements under conditions set forth in Exhibit A.
   - Science credits will increase from 2 credits to 3 credits. Science credit requirements may be met through other subjects designated by the State Board of Education as having substantial science content, such as career/technical education.
   - Total number of required credits will increase from 20 credits to 22 credits

3. Beginning with the Graduating Class of 2013, students may choose to pursue an alternative high school graduation requirements aligned to Arizona public universities' admission standards as follows:
   - Four credits of English as defined under current rule
   - Four credits of Math to include Algebra I, Geometry, Algebra II, and a 4th math course with an Algebra II or higher prerequisite.
   - Three credits of Science, including one credit from three of the following areas: biology, chemistry, physics, or earth science
   - Three credits of social studies as defined in point 1 above
   - One credit of Fine Arts
   - Electives of 7 credits, of which 2 credits must be earned in world languages
   - Total number of required credits will increase from 20 credits to 22 credits

Arizona High School Graduation Requirements
Proposed Modifications
(8/10/07)

Graduating Class 2012	*Graduating Class 2013*
State Diploma English 4 credits **Math 3 credits** Science 2 credits **Social Studies[1] 3 credits** CTE/Fine Art 1 credit Electives 7 credits Total 20 credits [1]Social Studies shall consist of one credit of American History, one credit of World History, one-half credit of government and one-half credit of economics. However, economics may be taught in departments other than social studies as determined by local district governing boards.	State Diploma English 4 credits **Math[1] 4 credits** **Science[2] 3 credits** Social Studies 3 credits CTE/Fine Art 1 credit Electives 7 credits Total **22 credits** [1] To receive the diploma, a student's math course of study must include those courses through Algebra I, Geometry, and Algebra II or other courses that include Algebra I as a prerequisite. Additional courses in math may include courses in other subjects designated by the State Board of Education as having substantial mathematics content, such as Career and Technical Education, Economics and Arts courses. Using a State Board of Education approved process, students who meet specific requirements may pursue a Personal Curriculum pathway to fulfill math requirements as set forth in Exhibit A. [2]Science credit requirement may be met through other subjects designated by the State Board of Education as having substantial science content, such as career/technical education.
	Regents Diploma[1] English 4 credits **Math[2] 4 credits** **Science[3] 3 credits** Social Studies 3 credits **Fine Art 1 credit** **Electives[4] 7 credits** **Total 22 credits** [1] The Regents Diploma is an alternative pathway that reflects Arizona Board of Regents' admissions policy requirements [2] Must include those courses through Algebra I, Geometry, Algebra II and a 4th math course with an Algebra II pre-requisite [3] Must include one credit from three of the following areas: Chemistry, Physics, Biology or Earth Science [4] Must include 2 credits of World Languages

EXHIBIT A

PERSONAL CURRICULUM (PC) MODIFICATION

The use of a Personal Curriculum (PC) Modification is allowed for only two reasons:

- A student wishes to modify the mathematics requirement
- A student with a disability needs to modify the credit requirements based on his or her disability

DEFINITION OF PERSONAL CURRICULUM

The PC is a documented process that can be used to modify certain portions of Arizona's High School Graduation Requirements.

The PC, requested by the parent, legal guardian, or emancipated student, allows the governing board of a school district or charter school to award a student a high school diploma provided all elements of the PC are met. This must include as many of the content expectations of the standard Arizona High School Graduation Requirements as practicable.

A PC allows a student who is challenged with Algebra II to adjust his or her remaining mathematics credits. The PC may also be an option for students with disabilities requiring specific modifications to Arizona's High School Graduation Requirements to ensure progress with career pathway and post-secondary goals.

The PC is not a stand-alone document that drives a student's high school experience, but must be developed and coordinated with any other plans a student has in place, such as an Individualized Educational Program (IEP). At a minimum this means that modifications to the student's academic expectations made through the PC option should not erect barriers to progress along their career pathway or the achievement of post-secondary goals. The IEP is to support the student's progress in the general curriculum.

ELIGIBILITY FOR USE OF PC MODIFICATIONS

A PC may be appropriate for a student who has demonstrated one or more of the following:

- Lack of progress towards meeting Arizona's High School Graduation Requirements despite documented interventions, supports, and accommodations for a student with a disability

- Desire to complete math requirements through CTE or other programs

The PC is not a process for tracking large groups of students into an alternative curriculum.

ALLOWABLE MATHEMATICS MODIFICATIONS

A student can use the PC to reduce the course requirements for mathematics to three credits provided the student takes mathematics in the senior year. A PC can modify the Algebra II credit requirements if the student has successfully completed at least two of the required mathematics credits (Algebra I and Geometry or its equivalent).

Additional courses in mathematics can include courses in other subjects designated by the State Board of Education as having substantial mathematics content, such as Career and Technical Education, Economics, and Arts courses.

ALLOWABLE MODIFICATIONS FOR A STUDENT WITH A DISABILITY

The parent of a student with a disability may request a modification to Arizona's High School Graduation Requirements that is not otherwise allowable if the student has a disability as defined in the Individuals with Disabilities Education Act of 2004. This allows for additional credit substitution or content modification if the changes are based on the student's disability.

KEY POINTS FOR THE PC FOR STUDENTS WITH DISABILITIES

IDEA 2004 guarantees a free appropriate public education but does not establish an entitlement to a diploma. Every effort must be made to provide students with disabilities full access to the standard Arizona High School Graduation Requirements before making modifications. Modifications to state standards may affect a student's opportunity to achieve a diploma. For a student eligible for special education services, the PC modifications must:

- Incorporate as much of the subject area content expectation as practicable for the student

- Be consistent with the student's IEP

- Modify components of the content expectations within each credit requirement

PERSONAL CURRICULUM MODIFICATION PROCESS

The PC modification process demands the involvement of many people and should be used only after other options, like the use of electives, have been exhausted. Elements / requirements of the PC modification process include:

- **Initiation:** Initiated by the parent/legal guardian or emancipated student, or by the student with permission of parent/legal guardian

- **Development Team:** The development of a PC modification must include the parent / legal guardian, student, counselor or principal designee, and the school district superintendent or charter school executive or designee. The development of a PC modification for a student with a disability shall be completed by the student's IEP team.

- **Agreement:** Written agreement between the school district or public school superintendent or chief executive, parent/legal guardian, and student

- **Credits and Content:** Must meet as many of the standard Arizona High School Graduation Requirements as practicable. The PC shall include measurable high school goals and a method of evaluation to determine whether goals are met.

- **Use of IEP:** Special education students' IEPs shall identify courses (which may be contained in the PC), supports, accommodations and modifications.

As the Development Team formulates the PC the members should ensure that the proposed modifications:

- Reasonably enable the achievement of post-secondary goals

- Facilitate progress along the student's career pathway and the achievement of post-secondary goals

- Enhance the relevance of the student's educational experience

- Provide full access to statewide assessments

- Provide a gateway to employment and productive adult living

- Maintain the integrity of the diploma

The Superintendent of Public Instruction shall monitor a school district if there is reason to believe that the school district is allowing modifications inconsistent with the requirements set forth by the State Board of Education.

LIMITATIONS ON PC MODIFICATIONS:

There are no modifications to credit requirements allowed in the following areas, except for students with disabilities:

- English
- Science
- Civics/Government/American History, World History, and Economics

Additionally, a student may wish to specialize in a curriculum area like music or career and technical education. The PC modification is not necessarily the way to accomplish this. For example, a personal curriculum is not needed if:

- A student wants to pursue career and technical education courses, humanities courses, industrial education or applied arts
- A student wants to take accelerated courses through dual enrollment, advanced placement or International Baccalaureate
- A student wants to enroll in alternative education programs

Students participating in these programs are expected to meet the standard Arizona High School Graduation Requirements and can do so through the use of electives, testing out, CTE programs and other processes which are already in use in the high school. The school district or charter school may deny a PC modification if other options for meeting the student's educational needs have not been documented, if it is not in the best interest of the student, or if the members of the PC development team cannot reach agreement.

POTENTIAL ADVERSE EFFECTS OF USING A PC

Parents and students need to understand the possible consequences for modifications of the Arizona's High School Graduation Requirements or high school content expectations. Personal curriculum modifications for students with disabilities that reduce the number of content expectations mastered by the student, may affect the student's readiness to:

- Be admitted to college

- Be eligible for college scholarships
- Enter a trade school
- Secure a job in the career of their choice
- Be eligible for NCAA athletic programs

GOVERNOR'S P-20 COUNCIL
October 1, 2007

Agenda Item No. 5.

Subject: Presentation and Discussion: Alignment of Mathematics Standards

Submitted by: Debra Raeder
Executive Director

----- Background Information -----

Guided by Achieve, Inc. staff, the Alignment Team has been reviewing Arizona's mathematics standards as compared to the American Diploma Project (ADP) Benchmarks. From a side-by-side examination of Arizona's standards and the ADP Benchmarks, the Team developed options and strategies for strengthening Arizona's standards as part of the approach to matching high school standards with the expectations of college faculty and employers. Members of the Team will provide an overview of the process and the Council will be presented with Achieve's findings regarding this work.

Council Action Requested: Approval of recommendation to enhance Arizona's mathematics standards.

Attachments:

List of Mathematics Alignment Team Participants
PowerPoint Presentation
Achieve, Inc., Reports: *Do All Students Need Challenging Math in High School?* **and** *Will Raising High School Graduation Requirements Cause More Students to Drop Out?*

ALIGNMENT INSTITUTE TEAM MEMBERS

1. **Dr. Karen Nicodemus** - Team Leader
2. **Dr. William McCallum** – University of Arizona
3. **Dr. Rebecca McGraw** – University of Arizona
4. **Dr. Carlos Castillo-Chavez** – Arizona State University
5. **Dr. Janet McShane** – Northern Arizona University
6. **Jeff Thies** - Central Arizona College (ATF)
7. **Molly Beauchman** - Yavapai College (ATF)
8. **Dr. Mary Vanis** - Workforce (Pima College)
9. **Cheryl Lebo** – Arizona Department of Education
10. **Mary Knuck** – Arizona Department of Education
11. **John Jensen** – High School Math Teacher/Ris Salado College

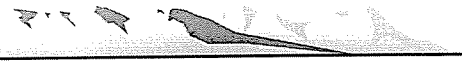
Staff Support:

Debra Raeder
Lauren Kielsmeier
Erin Hart

Governor's P-20 Council

MATHEMATICS STANDARD
ALIGNMENT INSTITUTE TEAM REPORT

October 1, 2007



MATHEMATICS ALIGNMENT TEAM MEMBERS

Dr. Karen Nicodemus – Team Lead
- State Board of Education

Cheryl Lebo
- Arizona Department of Education

Mary Knuck
- Arizona Department of Education

Dr. Carlos Castillo-Chavez
- Arizona State University

2

MATHEMATICS ALIGNMENT TEAM MEMBERS

Dr. Janet McShane
- Northern Arizona University

Dr. William McCallum
- University of Arizona

Dr. Rebecca McGraw
- University of Arizona

Jeff Thies
- Central Arizona College

3

MATHEMATICS ALIGNMENT TEAM MEMBERS

Molly Beauchman
- Yavapai College

John Jensen
- Rio Salado College

Dr. Mary Vanis
- Pima College

4

ADP Network Policy Agenda

- Align high school standards with demands of college and work.
- Require students to take a college- and work-ready curriculum to earn a high school diploma.
- Build college-and work-ready measures into statewide high school assessment systems.
- Hold high schools and postsecondary institutions accountable for student preparation and success.

5

Arizona Department of Education Mathematics Standard Agenda

May – June of 2007, the ADE launched a Mathematics Standard Review to:

- Extend AIMS beyond a 10th grade standard
- Ensure the standard is valid
- Identify gaps
- Ensure understandable format
- Ensure current research is reflected

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Purpose/Criteria of the Alignment Process

Develop high-quality Academic Standards for College and Work in math and English that prepare students for entry and success in entry level, credit-bearing college courses and quality, high growth jobs.

1. Rigor
2. Coherence
3. Focus
4. Specificity
5. Clarity/Accessibility
6. Measurability

7

RESULTS OF QUALITY REVIEW

The Alignment Team's final product proposes student learning expectations that are intellectually demanding and well aligned with the ADP Benchmarks in Mathematics.

- ☑ Well Aligned
- ☐ Well Aligned with Minor Exceptions
- ☐ Aligned with Major Exceptions
- ☐ Partially Aligned
- ☐ Not Aligned

RESULTS OF QUALITY REVIEW

- The Arizona Academic content Standard for High School Mathematics is well aligned with the ADP Benchmarks.
- The Standard exhibits the criteria of high quality standards.
- In some areas, the Standard exceeds the level of rigor defined in the ADP Benchmarks.

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RECOMMENDED NEXT STEPS

- Proceed with implementing the proposed revisions to the 9-10 Standard and the addition of the college and work readiness standards through grade 12.
- Develop model courses and course sequences to guide instruction.
- Continue cross-collaborative efforts between K-12 and state's postsecondary institutions.
- Develop plan for Algebra II end-of-course exam

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WITH THE END IN MIND

- Ensure Alignment Team continues to work with ADE Team until K-12 standard is fully developed
- Ensure that stakeholders across P-20 support effort
- Ensure Standard is rigorous and relevant
- Ensure Students are college and work ready by high school graduation

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QUESTIONS?

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Do All Students Need Challenging Math in High School?

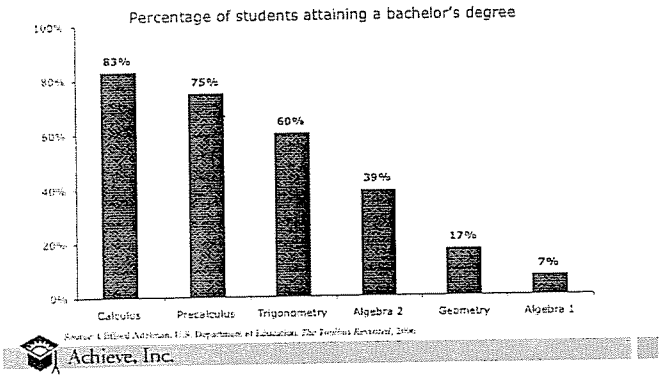
As states begin to examine their high school mathematics standards and align requirements with the demands of work and college, some concerns are emerging. How much math is really needed? What if students are not planning to go to college? Do all students really need Algebra II?

The research on this is clear, and it may come as a surprise to many adults who did not take higher-level math courses when they went to school. For most students, taking challenging mathematics in high school is the gatekeeper that either opens or shuts the doors to great opportunities.

Math Is Essential for Success in College

In a pair of landmark federal studies that followed high school students through their postsecondary years, Clifford Adelman found that the highest level of math taken in high school has the most powerful relationship to earning a bachelor's degree. This is true regardless of student ethnicity, family income or parents' education levels. Students who complete Algebra II in high school *more than double* their chances of earning a four-year college degree. Those who do not take challenging math courses are much more likely to end up in remedial courses and are more likely to drop out.

Highest level of math in high school is the strongest predictor of BA attainment, regardless of race, family income or background



Two-Year Colleges Also Require Rigorous Math

Students planning on attending community college also need strong Algebra II skills. Although most two-year colleges allow any student with a high school diploma to attend, students cannot get into "credit-bearing" courses unless they meet a certain level on a placement test in reading, writing and mathematics.

Most of these math placement tests cover geometry and advanced algebra. And most certificate and degree programs at two-year colleges require at least one credit-bearing math course — so it's hard for students to avoid math in college.

More than one-third of community college students fail placement tests and need to be remediated in math. And unfortunately, two-thirds of students who take remedial math courses will drop out without earning their degree.

Well-Paying Jobs Require Strong Math Skills, Too

It is not only the college bound who need more math. Increasingly, well-paying jobs that pay a living wage and allow for career advancement require strong mathematics, problem-solving and reasoning skills as well.

Due to advancements in technology, manufacturing companies need employees with strong math skills to operate the machinery on the factory floor. Eastman Chemical in Texas has an established company-run Operator Apprenticeship Program to train new machine operators. Apprentices are evaluated on their ability to perform tasks that require solving multiple-step math problems and presenting solutions in the appropriate unit of measure or dimension. In 2000, there were 1.6 million jobs for machine operators, paying median hourly wages from $10.40 to $16.07.

Those in the construction trade also need higher math skills. According to the Associated General Contractors of America, electricians, pipe fitters, sheet metal workers, draftsmen and surveyors all need algebra, geometry, trigonometry and physics to be successful on the job.

If you think this sounds a lot like the math courses students need for college, you're right. A new study by ACT looked carefully at the skills needed for success in freshmen courses in college and compared them to skills needed for training programs in occupations that offer a salary sufficient to support a family of four. ACT concluded that those jobs require a comparable level of math skills in algebra, geometry, data analysis and statistics as colleges do.

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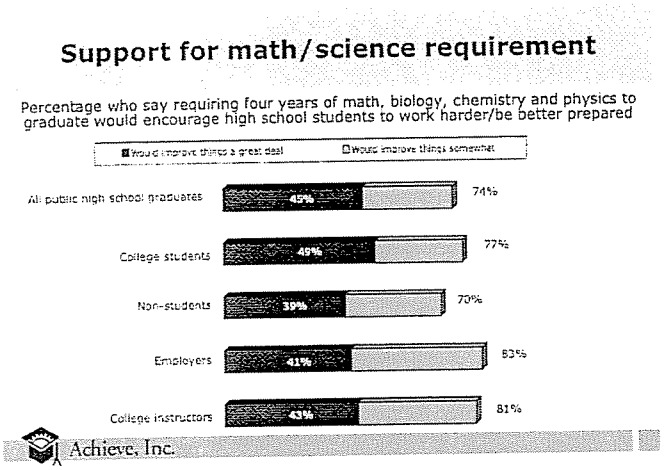
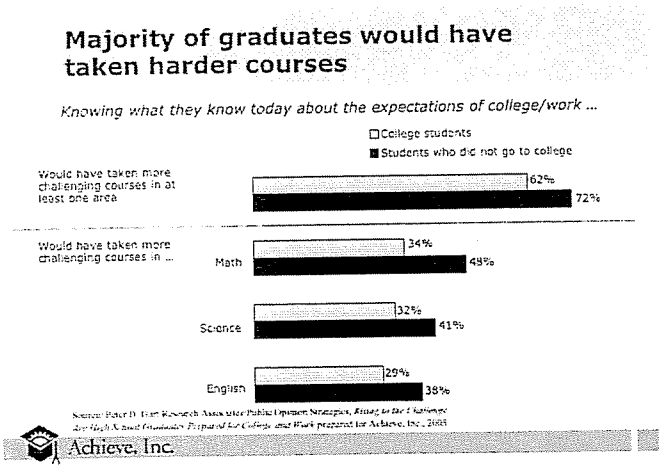
Do All Students Need Challenging Math in High School?



Students Want More Challenging Courses

In a national poll of recent high school graduates, more than two-thirds who took Algebra II in high school reported that they were well prepared for the demands they faced in college and the workplace. In contrast, of graduates who took less than Algebra II, only four out of 10 say they were well prepared. The statistics were similar whether graduates went to college or directly to the workplace.

Eighty percent of graduates said they would work harder and apply themselves more if they could go back and do high school all over again — that answer was the same for those who went straight to the workforce and for those who went on to college. More than two-thirds of graduates would like to have taken harder courses in high school knowing what they know now about the demands of the workplace and college. When it comes to math, one-third of college students and half of those who went straight to the workplace would have taken more rigorous high school courses.



Closing the Expectations Gap

In most states, students can take all of the required mathematics courses and earn a high school diploma without being prepared for success in college or the workplace. Simply put, graduation requirements have not kept pace with the changing world students will enter after high school.

The good news is that some states and communities are raising graduation requirements so that all students take a challenging math curriculum. Arkansas, Indiana, Kentucky, Michigan, Oklahoma and Texas are among the states that have put more rigorous requirements in place. Boston, Chicago, Los Angeles and San Jose also have raised requirements. In each of these states and districts, students will be expected to take three or four years of math through at least Algebra II. This should dramatically improve their preparation for the world they will enter after high school.

The Bottom Line:
No matter what path they choose after they finish high school, students who have taken more demanding math courses are better prepared.

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Will Raising High School Graduation Requirements Cause More Students To Drop Out?

Perhaps the biggest concern about raising graduation requirements is that such policies will cause more students to drop out of high school. Indeed, many people assume that high academic standards and high graduation rates simply are not compatible: The only way to raise graduation rates, they believe, is to lower academic standards.

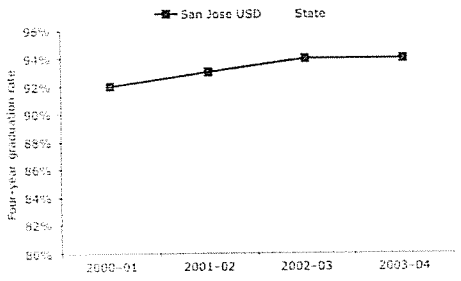
People are right to be concerned about high school dropout rates; they are alarmingly high, particularly in our inner cities. But dropout rates were a problem before states began raising academic standards, and there is no evidence that higher expectations for students increases their chances of dropping out. In fact, the opposite may be true. When students are challenged and supported, they rise to the occasion.

Raising Standards Does Not Lower Graduation Rates

Several years ago, San Jose Unified School District began requiring all students to complete the full set of courses required for admission to California's public colleges and universities. The percentage of San Jose students taking this rigorous curriculum and earning a C or better in all of the courses went from 37 percent to 65 percent between 2001 and 2004. This more rigorous course-taking also had a positive effect on test scores and helped increase the college-ready rate for Latinos from 17 percent in 1998 to 45 percent just four years later. Enrollment for Latinos in AP courses more than doubled.

Most important, San Jose's success has not come at the expense of higher dropout rates, as some people feared. **The district's four-year graduation rates actually *improved* slightly while the state average dropped.**

San Jose Unified School District
Graduation rates have not declined



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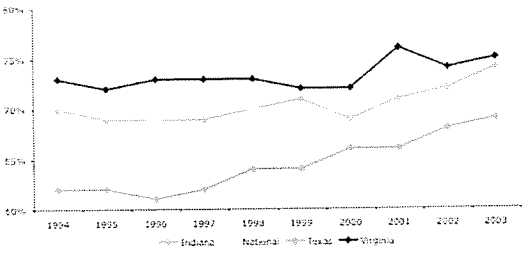
In 1997, Chicago raised its graduation standards to well above what Illinois then required, asking all students to complete all of the courses necessary for entry to competitive state universities. Although many worried that the requirements would drive students to drop out, graduation rates actually improved over the next few years. A team of independent researchers found that some of the improvement was due to the tougher exit standards themselves. The new requirements encouraged freshmen and sophomores to accumulate more credits early in high school, a powerful predictor of graduating on time.

If we look at some of the states that have been the most aggressive about raising expectations in high school, we also find that more students rise to the challenge and dropout rates do not increase. In the 1990s,Texas and Indiana established honors diplomas based on a rigorous college-prep curricula and encouraged more students to take those courses (they have since made them the graduation requirement). According to data from the Manhattan Institute, as the number of students enrolling in these courses climbed in these two states, the graduation rate held steady and, in some cases, improved. The same was true in Virginia after it instituted new end-of-course graduation tests. The percentage of students passing these tests went from 40 percent to 80 percent in the first five years, with no increase in the dropout rate.

High school graduation rates as states raise expectations



Achieve, Inc.

Achieve, Inc.

Will Raising High School Graduation Requirements Cause More Students To Drop Out?

Higher Standards Must Be Accompanied By Supports

While higher standards may not cause more students to drop out, simply holding graduation rates steady is not good enough either. School systems must raise standards, improve student achievement and increase graduation rates all at the same time.

To accomplish this, higher standards must be accompanied by more intensive academic supports. The Virginia legislature appropriated $200 million for fiscal years 2005–2006 to fund K–12 prevention, intervention and remediation efforts, including after-school tutoring and summer school for students who failed the graduation tests on their first attempt, as well as an Algebra-readiness program. San Jose Unified School District adopted a similar approach, providing struggling students with extended learning time after school and on weekends, and forming partnerships with community colleges and businesses to provide tutoring and mentoring support.

One recent study found that high schools with highly supportive teachers cut the probability of dropping out in half, and the impact was even greater for low-achieving, low-income students. A study of Maryland high schools found that those using a school-within-a-school strategy or a team-teaching approach for ninth graders "showed substantial improvements on promotion, dropout and achievement outcomes between 1993–1994 and 1999–2000."

Dropouts Themselves Say Low Standards Are Part of the Problem

Surveys have consistently found that teenagers cite boredom — not demanding classes — as the biggest reason for dropping out of high school. In one recent survey, seven out of 10 dropouts said their schools did not motivate them to work hard, eight out of 10 said they did less than one hour of homework each night, and two-thirds said they would have worked harder if adults had expected more of them. A national survey of public school students found they most often considered dropping out because "school was boring" (76 percent) and "I wasn't learning anything" (42 percent).

Other studies have shown that, everything else being equal, schools that push students to take tougher academic courses actually have lower dropout rates. Two University of Michigan researchers found that high schools that offer fewer low-level math classes below Algebra I reduce the odds of dropping out by 28 percent, and those that offer challenging classes like Calculus reduce the odds by 55 percent. "This finding flies in the face of those who say that high schools must offer a large number of non-demanding courses in order to keep uncommitted students in school," the researchers concluded.

In other words, it's not high expectations that cause students to drop out. Students are more likely to become disengaged and drop out when they are not challenged.

The Bottom Line:
Educators and others are right to be concerned about dropout rates. In today's world, students who leave high school without a diploma face diminishing opportunities and a lifetime of financial struggle. But the answer is not to continue to expect little of teenagers and to enroll low-achieving students in "easy" classes that bore them and teach them little of value. We owe it to students to challenge and support them so they graduate with the knowledge and skills necessary to succeed.

GOVERNOR'S P-20 COUNCIL
October 1, 2007

Agenda Item No.	6.
Subject:	Update and Discussion: Higher Education Demand and Feasibility Study
Submitted by:	Debra Raeder Executive Director

----- Background Information -----

Dennis Jones and Patrick Kelly of the National Center for Higher Education Management Systems (NCHEMS) will provide the Council with an overview of the Higher Education Demand and Feasibility Study and models.

The study served as the foundation for a Higher Education Workshop that was held on September 22nd with legislative leaders, community college presidents and chancellors, and university presidents. During that workshop, consensus was reached on collective goals, strategies and indicators for Arizona's higher education system. A summary of the workshop, including next steps, is included for your review and support.

Council Action Requested:	None
Attachments:	Summary of Models

Higher Education Demand and Feasibility Study
Overview of Models

Purpose: To assess the impact of policy changes on Arizona's higher education system.

Student Flow Model:
Purpose: To assess the future impact of improving performance at various stages in the education pipeline on degree production and enrollment.

Uses:

- To assess student demand under varying types of assumptions of student behavior (e.g. increases in high school graduation rates or college participation rates).
- To assess which improvements in the K-12 or higher education systems would yield the greatest impact (e.g. increasing rates of student retention, closing the race/ethnic gap, etc.).
- To study the future demand of higher education in Arizona.
- To see the number of certificates and degrees needed to meet the US average education attainment rate by 2025.
- To study the impact of potential goals that may be set for K-12 or higher education.
- To understand the costs associated to meet increased enrollment, improved efficiency, or alternative methods of delivery (e.g. 2+2 models).
- To investigate student demand on individual institutions.

Enrollment Model
Purpose: To determine the impact of population growth on postsecondary institutions.

Uses:

- To see the impact of participation rates by county and age group on individual institutions.
- To study the impact if each county and/or age group's participation rates are raised to the state average (or higher).
- To study the impact of statewide goals related to participation rates by county or age group.

Occupation Model
Purpose: To understand the additional needs for college-educated workers in the 12 Industries of Opportunity.

Uses:

- To understand how many more total workers and college-educated workers are needed in each occupation.
- To project the number of expected annual openings in each occupation and their required level of education.
- To simulate total employment in one or more industries and see the potential impact on higher education.

GOVERNOR'S P-20 COUNCIL
October 1, 2007

Agenda Item No. 7.

Subject: Committee Updates

Submitted by: Debra Raeder
Executive Director

----- Background Information -----

This item provides the Governor's P-20 Council's Committee Chairs and Members an opportunity to provide update information and reports to the Council.

a. Communications Committee – Paul Luna, Chair
b. Education Alignment Committee – Dr. Karen Nicodemus, Chair
c. Education/Workforce Pathways Committee – Dr. Jim Zaharis and Susan Carlson, Co-Chairs
d. Teachers Committee – Dr. Kino Flores
e. Adolescent Literacy Committee – Kristen Rex, Chair
f. Data, Assessment & Graduation Committee – Dr. Sybil Francis, Chair
g. Steering Committee – Dr. Rufus Glasper, Chair

Council Action Requested: None

Attachments: Committee Updates
Teacher Quality and Support and Governor's P-20 Council Recommendations Crosswalk and Status Update

COMMITTEE UPDATES
October 1, 2007

Communications Committee: Work continues with education and philanthropic partners to develop a short- and long-term communications plan to build public awareness and support of the P-20 Council's recommendations as they are being implemented and to inform key Arizona constituencies. Work has begun with a state contract public relations firm to develop a budget, timeline, and strategies for implementation of a comprehensive communications plan. It is anticipated that a communications plan will be presented to the Council in December.

Education Alignment Committee: Two major initiatives of the Committee, the Mathematics Alignment Project, and the Higher Education Demand and Feasibility Study, culminated in presentations to the Council. The Committee continues to work with Achieve to address Arizona's participation in the now 13-state consortium to develop and implement a common Algebra II End of Course Assessment.

Education Pathways/Workforce Committee: The Pathways Committee has been working in partnership with the Department of Education's Career and Technical Education (CTE) department on two major issues: (1) enhancing academic content within CTE courses and (2) the potential of universities accepting CTE credit for entry. The committee will continue researching how other states have accomplished these things effectively and is planning to discuss the university acceptance issue with ABOR in October.

Teachers Committee: The Teachers Committee is working to review and better understand the state's teacher supply, in response to the State Board of Education's proposal to increase graduation requirements. The committee is looking to develop creative ways to increase the supply, especially in math and science fields. Recently, the Committee has heard an update on teacher production from the public and private universities, and will continue the discussion with community colleges next month. The committee is also working to move the work forward of the Governor's Committee on Teacher Quality and Support. Their final report is included in the Council packets for your review, along with a crosswalk of the P-20 and TQS recommendations.

Adolescent Literacy Committee: A toolkit, in the form of a poster, is being finalized that will provide simple and doable literacy practices and tips to all 4th, 5th and 6th grade teachers throughout Arizona. The toolkit will be distributed in tandem with Governor's Napolitano's Book program, which provides every first and fourth grader in Arizona a book to take home. The toolkit is the result of three adolescent forums held around the state wherein participants indicated that middle school teachers needed such a toolkit. The Council, through the work of the Committee, will also be providing scholarships ranging from $1,500 to $2,000 for teachers to attain the state Reading Endorsement with a focus on rural areas. This program is being facilitated through the Arizona K-12 Center. Both projects are being funded through the NGA Adolescent Literacy Grant.

Data, Assessment and Graduation Committee: The Committee continues to address implementation of the 10 elements of a longitudinal data system. One of the 10 elements -- a teacher identifier system with the ability to match teachers to students -- has been a priority for this Committee. The Governor's Office has convened a working group to form consensus around teacher identifier legislation that could be offered during the 2008 Legislative Session. The working group is composed of representatives from the P-20 Council, AEA, ADE, ABOR and GITA

Teacher Quality and Support and Governor's P-20 Council Recommendations Crosswalk and Status Update

TQS Committee Recommendations (2005)	TQS Next Steps	P-20 Council Recommendations (2006)	Status
Professional Development Standards			
Adopt the National Staff Development Council's Standards for Staff Development.	• Adopt and implement the National Staff Development Council "Standards for Staff Development".		• The State Board of Education received a one-time appropriation of $150,000 in the 2007 budget to develop a statewide system of standards for professional development. • The State Board of Education has not taken formal action on this recommendation. The ADE has adopted these standards and have supported a number of school districts as they work to implement them.
Phase in the professional development standards over time to allow the state to build the resources and infrastructure necessary to support schools and educators. The state should immediately provide technical assistance to help educators understand the standards as well as guideposts for selecting and offering effective, standards-based professional development. The state should provide technical assistance grants to schools and districts demonstrating the most need.			• Not implemented.
Aligned Professional Development			
Pilot an individual professional development process for Individual Professional Development Plans and report results of the pilot to the State Board of Education by August 2008.			• The Arizona K12 Center has completed the first phase of the Individual Professional Development Plans pilot with 8 districts and school sites included in the Arizona Teacher Excellence Plan (AZTEP). These schools and districts also participate in the Professional Development Learning Academies (PDLA) with the Arizona Department of Education. • Next step: A report to the State Board of Education at the conclusion of the AzTEP program.

TQS Committee Recommendations (2005)	TQS Next Steps	P-20 Council Recommendations (2006)	Status
Ensure that professional development is considered as part of any state policy initiative or mandate that impacts the classroom in a substantive way and provide additional funding for the professional development to properly implement and deliver these new initiatives and mandates.			• Currently no comprehensive system exists to ensure that educators have access and are prepared to deliver changes required by policy makers and intended to improve student learning.
	• Restructure the K-12 School year to include opportunities for embedded professional development into the work year by funding additional days for professional development. • Provide professional development in key content areas, particularly Math and Science. • Provide ongoing technology training and development to improve and enhance teacher use of technology.	Provide for statewide professional development. • Ensure that professional development is standards based, embedded, data driven and relevant. • Ensure professional development for in-service teachers in content areas (e.g. math and science). • Develop a common suite of essential technology tools and ensure web-delivered access to both the tools and the training. • Provide training and ensure use of web-based formative assessments. • Ensure regional network for teachers. • Ensure career opportunities. • Provide mentoring.	• The State Board of Education received a one-time appropriation of $150,000 in the 2007 budget to develop a statewide system of standards for professional development.
Regional Access to Professional Development			
Ensure that schools and educators have regional access to research-based professional development information as well as best practices for teaching and learning. Ensure that schools and educators have regional access to highly qualified providers and that a coordinating entity exists to ensure regional capacity and accountability.	• Develop Regional Professional Development Centers/Partnerships.		• ADE, the K-12 Center, County Education Service Agencies, universities and community colleges offer opportunities for professional development, but they are largely offered in the Phoenix area. • Arizona does not have a central or regionalized system for identifying quality providers and providing that information to school districts. The ADE has preferred providers or approved vendors for some programmatic efforts, such as Reading First, Technology training and SEI.

TQS Committee Recommendations (2005)	TQS Next Steps	P-20 Council Recommendations (2006)	Status
Professional Standards Board			
Establish Professional Standards Board within the State Board of Education.			• The SBE has discussed the item in public session as part of policy updates, but has not scheduled an in depth discussion or has taken other formal action on the issue to date.
Study the possibility of a comprehensive statewide Professional Standards Board.			• The TQS committee studied this and developed recommendations that outline a potential board's authority, structure and funding (as outlined in the TQS report). • Education stakeholder groups have pursued this with legislation in the past, but no formal action has taken place otherwise.
Teacher Compensation			
General notes:	• Create a comprehensive Teacher Compensation system built on the development of three inter-related components, Base Teacher Salary, Performance Based Pay, Differentiated Pay and Market Factors.	Address teacher pay (based on TQS recommendations) to include: • Teacher compensation is competitive. • Market Based: Math, Science, and Special Education. • Performance-based wage enhancements.	• In the 2007 legislative session, the Joint Legislative Study Committee on K-12 School Funding and Best Practices was created. The committee is expected to review teacher compensation.
Establish a minimum teaching salary.	• Create a minimum statewide Base Teacher Salary of at least $30,000.		• 2007 – The Governor Napolitano's budget included $46 million to raise teacher base pay and for compression issues in 2007 and $100 million for teacher and administrator salaries in 2006.

TQS Committee Recommendations (2005)	TQS Next Steps	P-20 Council Recommendations (2006)	Status
Provide substantial performance pay opportunities.	• Create one Performance Based Pay system that is inclusive of all current legislative and initiative efforts; Career Ladder, Optional Performance Incentive Plan, The Classroom Site Fund and the Performance Based Compensation Task Force.		• The Legislature did pass a Performance Based Compensation Task Force Bill in the 2006 session, aimed at setting parameters and overall accountability for Proposition 301 Performance Based Pay systems. The unofficial initial findings suggest that few districts use a collaborative approach in defining their systems or yearly goals, systems often have such complex measurements and requirements that teachers often do not understand the goals they are working to achieve, and that the "bonus" is often such a small % (1-2%) of overall salary that it is not seen as relevant. Many teachers see these systems as "extra pay for extra work" rather than true performance incentives or systems that reward improved performance. Almost none of them take into account targeted professional development, reflective practice, or progress toward professional growth in any systematic way.
Expand Career Ladder to all districts.			• The Career Ladder program is implemented in 28 school districts, but has not expanded to others.
Provide incentives to teach in hard-to-staff schools.			• Not implemented.
Research the viability and possible pay levels for differentiated pay.	• Develop a Market Pay/Differentiated Pay system that is based on supply and demand factors and school demographics.		• Not implemented.

TQS Committee Recommendations (2005)	TQS Next Steps	P-20 Council Recommendations (2006)	Status
Teacher Preparation			
		Ensure Teacher preparation programs are geared for P-20 Readiness. • Ensure 21st Century preparation format. • Require, recognize and reward the effective use of education technology including certifications and endorsements. • Establish standards for use during pre-service classroom teaching experience. • Ensure student teachers receive adequate content area training and increase collaboration between colleges of education and other disciplines. • Require, recognize and reward certifications and endorsements in the areas of early childhood development; middle school content areas; reading, etc.	• P-20 is currently working towards these issues.
Teacher Attraction & Retention			
	• Expand the pilot of the working conditions survey to a statewide survey of all districts and conduct it at least every two years. • Provide a statewide, centrally funded mentoring and induction program.	Attract, prepare and retain high quality teachers in Arizona. Develop strategies to improve teacher quality, improve working conditions and attract highly qualified people into the teaching profession. • Provide funding for students during teaching semester. • Provide forgivable loans for high-needs placements. • Reduce tuition during student teaching. • Tuition waivers for students entering high-needs subject areas. • Increase incentives for recruitment to high-needs subject areas and hard-to-staff schools. • Provide for centrally funded mentoring and induction activities. • Consider state income tax benefit to offset costs associated with career transition. • Address other incentives such as insurance benefits and housing incentives	• 2007 – SB 1069 – A program was created through ABOR to provide forgivable student loans for teachers in special education, math and science ($2.25 million). • 2007 - $2 million was appropriated to the Master Teacher program. • 2006 and 2007 – Teacher Working Conditions Survey was conducted. A summary of the 2007 report is expected in September.

TQS Committee Recommendations (2005)	TQS Next Steps	P-20 Council Recommendations (2006)	Status
Teacher Attraction & Retention, continued			
		• Explore P-12 options to encourage Arizona students to select teaching as a career.	
		Ensure a concentrated effort to recruit more science and mathematics teachers and to attract and train teachers already in the field to these content areas through: • Scholarships. • Bonuses for teachers working in underserved areas. • Math and Science Institutes for continued professional development. • Increased AP and IB training for teachers. • Ensure high quality teaching through well-developed curriculum, standards and assessments of student learning.	• P-20 Council is currently working to create a STEM Center and is working with teacher preparation programs and with ABOR to address the need for more STEM teachers. • 2007 – SB 1069 – A program was created through ABOR to provide forgivable student loans for teachers in special education, math and science ($2.25 million).
Data			
		Prioritize the implementation of needed data elements pursuant to the recommendations in the National Data Quality Campaign. • Implement teacher identification systems in order to have better data on teacher preparation, supply and performance. • Make formative assessments and data universally available. • Make technology available to all teachers, ensure that teachers are trained in the use of technology to deliver instruction and to enhance professional productivity and provide for disaggregating student data.	• The Governor's P-20 Council's Data Committee is working to ensure that all 10 Elements of an Effective Data System are implemented in Arizona. • 2007 – Legislation failed to implement a teacher identifier.

GOVERNOR'S P-20 COUNCIL
October 1, 2007

Agenda Item No. 8.

Subject: Update: 21st Century Skills Summit

Submitted by: Debra Raeder
Executive Director

----- Background Information -----

Dr. Ron Marx will provide information to the Council regarding the October 25th Arizona Summit on 21st Century Skills, which will take place at the University of Arizona in Tucson.

This is a collaborative effort among the Governor's P-20 Council, the Partnership for 21st Century Skills and the University of Arizona's College of Education. As you may recall, the Partnership for 21st Century Skills gave a presentation to the Council in late 2006; there is significant alignment between the Council's recommendations and the Partnership's work.

Participants at this invitation-only event will develop statewide recommendations on how to incorporate 21st century skills into teacher preparation, professional development, assessments and youth development programs.

Registration and additional information for the Summit can be located at: http://www.ed.arizona.edu/summit.

Council Action Requested: None

Attachments: None

GOVERNOR'S P-20 COUNCIL
October 1, 2007

Agenda Item No. 9.

Subject: Call to the Public

Submitted by: Debra Raeder
Executive Director

----- Background Information -----

This item provides Council members an opportunity to hear public comment on agenda items. Comments not specific to agenda items, according to open meeting laws, may not be addressed by the Council.

In order to ensure that all individuals desiring to speak during the public comment period be properly acknowledged and to allow sufficient time for the comments, we ask that a "Request to Speak" information sheet be completed and submitted to either the Council Chair or staff prior to the beginning of the meeting. **Comments are limited to three minutes.**

Council Action Requested: None

Attachments: None

GOVERNOR'S P-20 COUNCIL
October 1, 2007

Agenda Item No. 10.

Subject: Announcements
Adjournment

Submitted by: Debra Raeder
Executive Director

----- Background Information -----

Announcements:

Next meeting of the Governor's P-20 Council: **December 3, 2007 @ 10:00 a.m.**

Other:

Adjournment.

Council Action Requested: None

Attachments: None